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THE "HILL OF THE JACKAL" — THE 1951 EXCAVATIONS AT TALL-I SHOGHA, IRAN

BY

Bruno OVERLAET[*] & Possum PINCÉ[**]
([*]Royal Museums of Art and History, Brussels; [**]Ghent University)

Abstract: Louis Vanden Berghe excavated at Tall-i Shogha in 1951 at the start of his research on the prehistory of the Marv Dasht region in Southern Iran. It became the type-site for his Shogha ware and played a significant role in the Fars chronology he developed. Vanden Berghe surveyed the site, collected sherds and excavated graves with Shogha and Qaleh pottery. This paper presents and reviews the information on his research as it appears from his files in the Royal Museums of Art and History, Brussels. The excavator was awarded a selection of the ceramic finds; some of these were later acquired by the Royal Museums. The remainder of the finds, mostly ceramics but also a few metal finds, were at the time deposited in the Persepolis Museum and the Iran National Museum.

Keywords: Kur River Basin, Kaftari, Shogha, Qaleh, Fars, Iran.

Introduction

The Marv Dasht or Fars project was the very first Near Eastern fieldwork of the late Louis Vanden Berghe[1]. During the academic year 1950/51, Vanden Berghe studied Persian at the University of Tehran with a small stipendium funded through the cultural cooperation agreements between the Kingdom of Belgium and the then Imperial State of Iran. The Fars project was suggested to him by A. Godard and C.-A. Mustafawi, the director-general and director of the Iranian Archaeological Service, following the discoveries of painted ceramics by the Iranian scholar Mahmud Rad at several mounds in the Persepolis plain (Haerinck 1989: XIII-XIV).

[1] The Louis Vanden Berghe files are kept at the Royal Museums of Art and History, Brussels in the BArEO archive (BArEO: *Belgian Archaeological Expeditions to the Orient. Heritage in Federal Collections*; http://bareo.be/project/luristan-excavations/index.html). The BArEO archive is the outcome of a Brain project funded by BELSPO (http://www.belspo.be/belspo/brain-be/themes_3_HebrHistoScien_en.stm#BAREO). Co-author P. Pincé received a doctoral research grant as part of this Brain project.

Vanden Berghe needed to establish its chronological sequence. He intensively surveyed the plains around Persepolis and made soundings on several of the mounds (Fig. 1). During the academic recess, in the heat of late Spring and early Summer, from 28 May to 17 July 1951, he prospected the southern part of the Marv Dasht plain and he made soundings at Tall-i Jari, Tall-i Mushki, Tall-i Gap and Tall-i Shogha (Vanden Berghe 1952). During the next campaign, from 23 May to 3 August 1952, the northern part of the Marv Dasht and the adjacent plains were prospected. Soundings were made at sites such as Tall-i Qaleh (near Hasanabad), Tall-i Sauz, Tall-i Kamin, Tall-i Chakhmaqi, Tall-i Gird, Tall-i Darwazeh and Tall-i Taimuran (Vanden Berghe 1954). In the winter of 1954/55 he returned to make some additional soundings at Tall-i Taimuran (Overlaet 1997), Tall-i Kamin (Overlaet 2007) and Tall-i Qaleh (Haerinck & Overlaet 2003). Based on the results of these expeditions and the study of the ceramic assemblages, he was able to propose the first chronological framework for the area, covering a timespan from the Neolithic period to the Late Bronze Age (Vanden Berghe 1955-56; 1959: 41-44, fig. 7-9, pl. 47-60).

Tall-i Shogha, the *hill of the jackal*, is located to the southeast of Persepolis, between the Kuh-i Rahmat mountain and the Kur river (1566 m ASL, coordinates 29°51'18"N — 52°56'22" E) (Fig. 1-3). It was the very first site that Louis Vanden Berghe worked on and it became the type-site for his "Shogha ware". Vanden Berghe described the site as a high, elongated barren mound of circa 250 by 210 m. Linda Jacobs, who surveyed the site in 1976, estimated that the site covered an area of 5.8 hectares and rose 8 meters above the level of the plain. By then sugar beets were cultivated in the area around the site, made possible by mechanical irrigation, but the mound itself remained uncultivated (Jacobs 1980: 147). Nowadays, the situation remains largely the same although cereals have replaced the sugar beet cultures.

Until now, Vanden Berghe's discoveries at the site were difficult to use since only preliminary reports and general comments were published. Furthermore, some confusion exists about what exactly he excavated at the site. Vanden Berghe had studied and documented Rad's Shogha finds at the Tehran and Persepolis museums and used illustrations of Rad's finds together with pottery from his own excavations and Shogha style pottery from other Fars sites to illustrate Tall-i Shogha and the Shogha style. In his "Archéologie de l'Iran Ancien" for example, three plates show pottery,

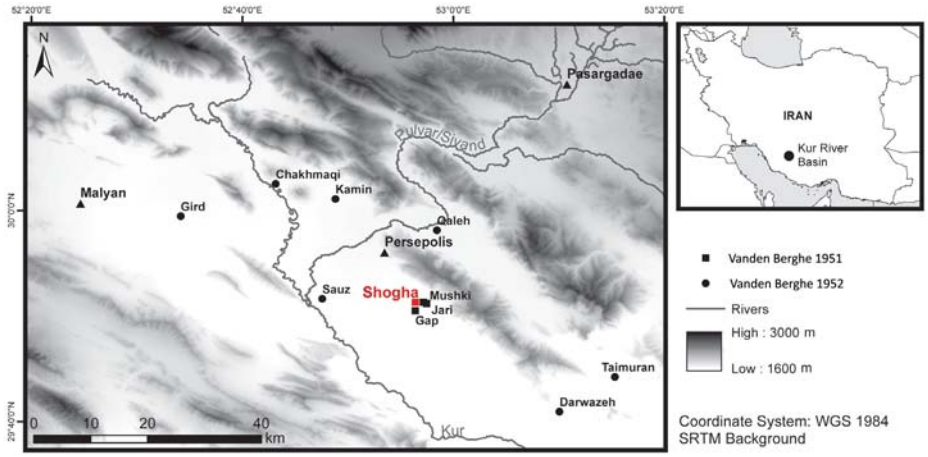

Fig. 1. Map with location of Tall-i Shogha and sites surveyed by L. Vanden Berghe in 1951 and 1952.

Fig. 2. Tall-i Shogha in 1951 (photo L. Vanden Berghe) and the present situation with irrigated cultures surrounding the site (photo T. De Schacht).

a bronze mace head and a stemmed bowl as from Tall-i Shogha, but only one vessel was excavated by him (Vanden Berghe 1959: 267, pl. 53-55. For pl. 53a see Fig. 10 and Pl. 6 below). The other material from Rad was most probably found at Tall-i Shogha but without excavation files, this cannot be ascertained.

This paper reviews Vanden Berghe's notes on his excavations at Tall-i Shogha to make the data accessible for research. The documentation on his 1951 excavations is now kept in the Royal Museums of Art and History and consists of some hand-written and typed notes, some photographs, drawings and sketches. These are, however, neither complete nor exhaustive. Vanden Berghe did not keep all his notes and was not able to photograph or draw all of his finds. The circumstances of his Fars research were extreme. He travelled to the sites on donkey or horseback, on his bicycle or sometimes simply on foot. He was only accompanied by a Persian guide, occasionally a policeman or soldier and relied on untrained locals to excavate. He organized the soundings, made notes, registered/drew finds and took care of the logistics (Fig. 3, Pl. 1). Modern standards of stratigraphic control and data recording can thus not be expected. Nevertheless, the archives made it possible to bring together enough data to provide an insight into his work.

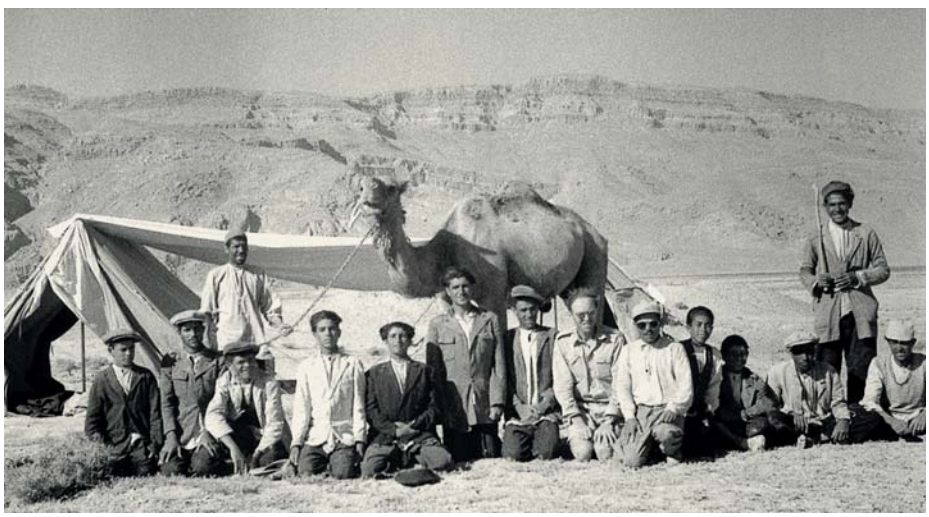

Fig. 3. Louis Vanden Berghe at Tall-i Shogha in 1951 (archive L. Vanden Berghe).

Tall-i Shogha and the Fars Chronology

Vanden Berghe was the first to propose a detailed chronology of Fars, based on his extensive surveys and soundings. He associated ceramic wares and decorative styles with "cultures" and "successive chronological phases". The ceramic traditions he named after the sites where he discovered them, still remain the reference today, although their timeframes have since the 1950's obviously been profoundly updated. Of relevance for his work at Tall-i Shogha, his type site for "Shogha ware", are Kaftari, Qaleh, and Shogha and Taimuran wares.

Kaftari ware appears at the end of the 3rd millennium BCE and was in use in the Kur River Basin between ca. 2200 and 1600 BCE. The information on the Kaftari phase derives from surveys such as those by Vanden Berghe and Sumner but mainly from the excavations at Tall-i Malyan, ancient Anshan. Kaftari pottery is found at sites throughout the Kur River Basin but related pottery has a much wider distribution. At its peak, Tall-i Malyan was a town with 130 of its 200 ha of walled land inhabited (Petrie, Asgari Chaverdi & Seyedin 2005: 52-61). The following decline of Malyan goes together with the appearance of Qaleh ware. There is a clear overlap and to some extend also a continuation of shapes and painted motifs to the point that Qaleh is sometimes described as a Kaftari sub-ware (Nickerson 1983: 128). The Qaleh phase is estimated to last approximately from 1600 to about 1000/900 BCE. Qaleh ware thus overlaps with ceramics that define the Kur River Basin Shogha/Taimuran phase, starting sometime between 1600 and 1300 and lasting until c. 900 BCE or possibly even later. Shogha and Taimuran[2] are two distinct ceramic traditions that proved to be largely contemporary. There is a marked decline and abandonment of sites in the early first millennium BCE[3] resulting in a lack of data until the start of the Achaemenid era, identifiable by the presence of Late Plain Ware. There are obviously important lacunae in our understanding of pre-Achaemenid Fars, which gave room to very hypothetical interpretations. The most recent fundamental contribution to the discussion derives not from Fars, but from the Mamasani region where excavations have produced long

[2] "Taimuran ware" was originally called "Taimuran A" to distinguish it from "Taimuran B", a dark grey-black ware known only by two vessels from Tall-i Taimuran. (Possibly the result of trade or travel rather than a local pottery tradition, see Overlaet 1997: 9-10; Potts, Roustaei, Weeks & Petrie 2009: 12.)

[3] Associated with climate change, see de Miroschedji 2003.

stratified sequences, reviving the discussions on the neighboring Kur River Basin. Potts, Roustaei, Weeks & Petrie still present the most up to date and balanced synthesis of the sometimes very divergent views on the Kur River Basin chronology (2009: 6-12, 231, Fig. 1.3).

The archaeological research at Tall-i Shogha

The first documented mention of "Tall-i Shogha" was by Erich Schmidt. He indicated the site on the map of the Persepolis area that he produced after an aerial survey with the "Friend of Iran", the plane donated to the American expedition by his wife Mary-Helen Schmidt (Schmidt 1939: 138-139, fig. 97). It was this map upon which Vanden Berghe would later rely during his surveys.

Mahmud Rad was the first to excavate at Tall-i Shogha in the 1940's. He excavated large trenches along the periphery and at the center of the mound that are even now still visible on Google Earth images (Fig. 4). He discovered a necropolis and deposited pottery and metal artifacts in the Persepolis museum and the National Museum in Teheran (Vanden Berghe 1952: 215; 1959: 267, pl. 53b-55). These finds brought Vanden Berghe to the site and it became the first of many mounds he investigated in the Marv Dasht.

Vanden Berghe arrived at Tall-i Shogha at the end of May 1951, started collecting surface sherds and decided to make several soundings. Lacking technical surveying equipment, he was not able to draft a detailed plan of the site but he did manage to make a sketch on which he indicated the position of his soundings and the areas that had previously been excavated by Mahmud Rad (Pl. 2).

The Tokyo University Iraq-Iran Archaeological Expedition, directed by Namio Egami, visited Tall-i Shogha during their 1959 season and collected 9 nearly complete vessels and 627 surface sherds and objects. All of these are now kept at the University Museum of the University of Tokyo (Department of Archaeology of Western Asia). A collection catalogue with the 9 Tall-i Shogha vessels was published in 2009 (Arimatsu, Mikuni, Ogawa & Nishiaki 2009: 132-141), followed up by a complete publication of the 627 other items from the site and 413 sherds from Tall-i Qaleh (Kharanagi 2015)[4].

[4] An online edition includes a complete database and colour illustrations of the collection (http://umdb.um.u-tokyo.ac.jp/DKoukoga/Tall-i_Qaleh_and_Tall-i_Shogha/preface.php?).

This extensive Japanese sweep of the site documented a wide spectrum of wares. Kharanagi was able to identify, apart from a massive amount of Shogha ware, also Bakun, Kaftari, Qaleh, Taimuran and Late Plain ware.

Tall-i Shogha was revisited by William Sumner between 1967 and 1969 as part of his Kur River Basin survey project. During his surface survey, he identified Tall-i Shogha (coordinates 10K1 on his Kur River Basin map) as site nr 379, an identification he wrote on all the samples he collected. Sumner collected flints (1972: 84-85, 89-90, pls. 9, 11) and sherds, identifying apart from the bulk of Shogha Ware (1972: 146-151, pls. 38-40) also some Kaftari Red Ware (1972: 127-128, pl. 27) and Qaleh Ware (1972: 144-145, pl. 37).

In December 1976, Linda Jacobs re-surveyed Tall-i Shogha and the other Shogha-Taimuran sites, using a different methodology. Rather than just walking the site and picking up samples, she combined a limited number of random finds with a systematic collecting of *all* visible sherds and artefacts from 6 squares, each measuring 10 by 10 m. The overall goal was to cover (and completely clear) in this way 1% of the site's surface (black squares on Fig. 4). She identified 7 Bakun, 1 Kaftari-Qaleh, 123 Shogha, 32 Taimuran, 29 Late Plain and 3 Partho-Sasanian/Islamic sherds (Jacobs 1980: 128-132, 147-149, 215, 301, 318-326, 344-345, fig. 44, 53-56, 65). While her methodology may allow specific statistical approaches of the material, it was inherent that such sampling also had its limitations. She notes that while she was able to observe the most common Shogha/Taimuran ceramic shapes, the full range of shapes and decorations that were listed by Vanden Berghe could not be attested. The tripod vessel, which Vanden Berghe considered to be a characteristic Shogha ware shape, turned out to be altogether rare in her surveys (Jacobs 1980: 148). This contrasts with the many tripods and fragments recorded by Vanden Berghe at Tall-i Shogha (Fig. 9, 19, Pl. 4, 10-11) and other Shogha sites such as Tall-i Taimuran, and Tall-i Kamin (Overlaet 1997: Fig. 11, 22, 25; 2007: pl. 11-13). The Japanese survey also counted 3 tripod legs among its Shogha sherds (Kharanagi 2015: Pl. 39.1, 66-67, erroneously labeled "handles").

The combined results of the three surface surveys has pointed out that the site had a much longer occupation history than could be identified by the excavator in 1951. In view of this, it is of interest to present the complete data set of Vanden Berghe's findings, particularly since these remain at present the only stratigraphic data available. In recent years, the Iranian

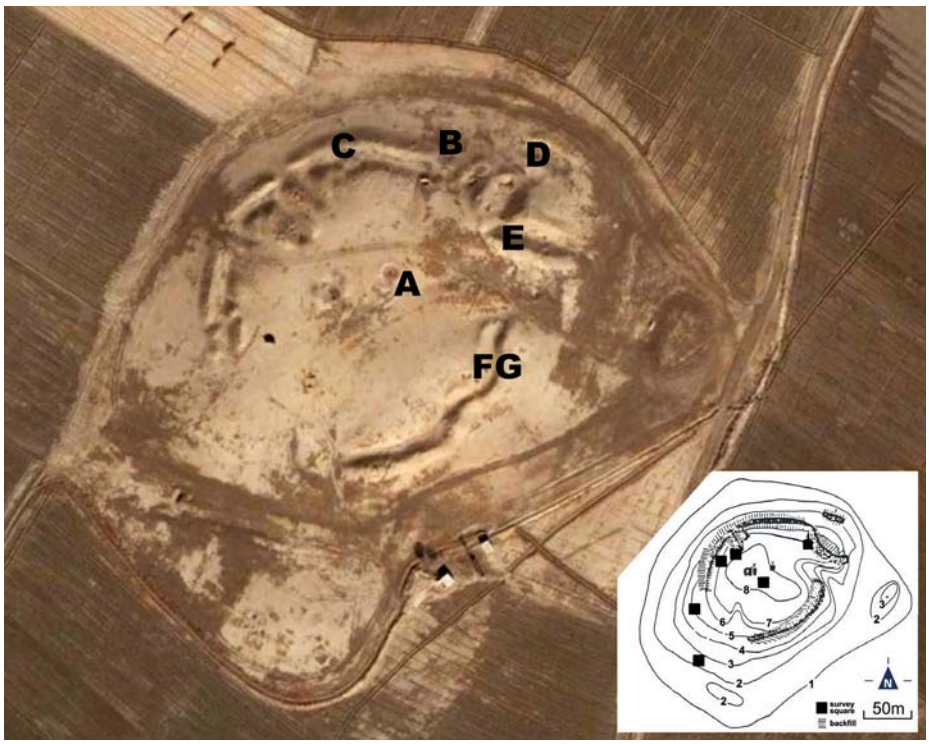

Fig. 4. Satellite image of Tall-i Shogha with the approximate location of Vanden Berghe's soundings based on his sketch on Pl. 2. Insert: Linda Jacobs' plan of the site (after Jacobs 1980: fig. 44).

Cultural Heritage and Tourism Organization has launched new surveys on the Marv Dasht sites, including Tall-i Shogha[5], and hopefully large scale excavations will soon follow.

Louis Vanden Berghe's survey and soundings at Tall-i Shogha

Vanden Berghe made six soundings labelled A to FG; graves within each sounding were given a consecutive number. A selection of sherds was numbered per sounding but it seems he collected more. Several sherds have more than one number (see e.g. Fig. 8-9, Pl. 5, 11). This could refer to sherds that later turned out to fit together but it is more likely that only

[5] Cfr an unpublished ICHTO report referred to in Kharanagi 2015: V. Barani, *Report of Archaeological Survey of Shogha and Timoran Sites, Kur River Basin, Marvdasht District*. Tehran: Research Center of Archaeology, ICHTO, 2014.

Fig. 5. Shogha style sherds from "Tall-i Shogha" in the collection of the Royal Museums of Art and History, Brussels. Acquired in 1994 from the Vanden Berghe estate.

one sherd was numbered and drawn when there were several with identical painted motifs. Vanden Berghe also kept a personal study collection of sherds, some of which he gave away to colleagues, others he used when teaching at the University. Four Shogha style sherds that he kept in a box labeled "Tall-i Shogha" were acquired from his estate in 1994 (inv. IR.2154-2155, 2157-2158). IR.2157 has "T Chogha T.∏" written in pencil on the back, IR.2158 only has " T.∏" and IR.2155 "T.T". They are all of Shogha *style*, but only one is thus identified with certainty as of Tall-i Shogha. It can not be excluded that the others came from another Fars site with Shogha style pottery since the sherds could not be identified from his notes.

Vanden Berghe collected and registered some 22 surface sherds (Fig. 6, Pl. 3), most of these were characteristic Shogha ware, but they also included some unpainted pottery, some Qaleh sherds (Fig. 4, Pl. 3: 51.5, 51.22) and at least one Taimuran sherd (Pl. 3: 51.10). There is no information as to where on the site they were found.

To cover the site as much as possible, Vanden Berghe positioned his test trenches in the center and along the periphery of the hill. Some were inside the trenches of Rad, in an attempt to understand what Rad had excavated and to document eventual older phases.

Vanden Berghe did not have any technical equipment and could only note the approximate depth of the finds at each sounding. The soundings can thus only be discussed as separate entities. His sketches and drawings of pottery and sherds are not always very accurate and only a few graves and a selection of sherds and vessels were photographed. Working long before the invention of digital photography, film was an expensive commodity for Vanden Berghe and had to be used very sparingly in the field; the limited stock had to last his whole campaign.

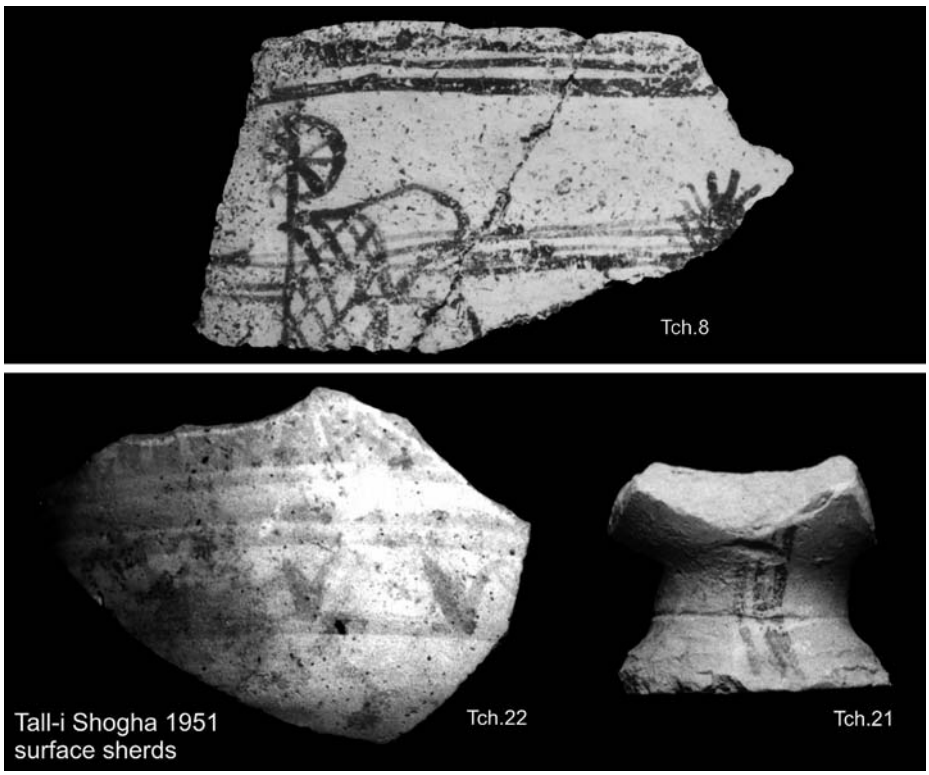

Fig. 6. Archive photos of surface sherds collected on Tall-i Shogha (compare Pl. 3): Tch.8. Shogha ware; Tch.21 and 22. Qaleh ware.

Vanden Berghe had a good understanding of ceramics and his identifications are for the most part rather accurate. However, these excavations were his first in his Marv Dasht project and he had not yet identified the major ceramic groups. He was not familiar with Kaftari, Qaleh or Taimuran ware and his understanding of "Shogha ware" only came from studying Rad's material. Since he never made a full publication of his Tall-i Shogha finds, only Qaleh ware was mentioned as an important group but sherds of other wares like Kaftari and Taimuran escaped attention.

This paper relies primarily on Vanden Berghe's 1951 notes, sometimes with later comments added to them, and on a small number of black and white photographs. Without handling the actual pottery or sherds from Tall-i Shogha and given the mere sketches and sometimes vague or seemingly conflicting descriptions, identifications are sometimes difficult or simply not possible. Only one vessel (Inv. IR.2506, Fig. 18, Pl. 10) and

4 sherds (Fig. 5) are now in the collection of the Royal Museums of Art and History. The remainder is in the Persepolis and Tehran museums or dispersed over private collections. The present paper might help to locate and identify them. As it was customary at the time, Louis Vanden Berghe received half of the finds from the Iranian Archaeological Service as a compensation for his efforts. Since he was at the time on a scholarship, he obtained the gift in his personal capacity and once in Belgium, he gave most of his Shogha ware to family, friends and colleagues. One of the vessels he received was exhibited in 1966 at Ghent, Brussels and Utrecht (Vanden Berghe 1966: 21 nr 15) and again in 1991 at his birth town Roeselare (Vanmoerkerke 1991: 131-132, nr 8, fig. 6c; another vessel cat. nr 10 was not illustrated, neither were the sherds listed as cat. nr 16; now in the Royal Museums, see Fig. 5). The present whereabouts of the two vessels at the Roeselare exhibition is not known.

SOUNDING A (Fig. 4, 7)

Sounding A was made at the center of the mound and consists of two rectangular plots (Fig. 4, Pl. 2). Plot A1 measured 4.05 by 2.50 m and had a depth of -2.70 m while plot A2 was 4.50 by 1.80 m and was only excavated to -1.60 m. A burial was found at a depth of -1.30 m in A1 and another one at -1.35 m in A2. The distance between both was 6 m. Vanden Berghe reported that the skeletons were found in an extended position with the faces directed to Mecca. In A1 the head rested on a stone. Because of the absence of grave goods and the positioning of the bodies, he concluded that these had to be Islamic burials, possibly of local nomads. At the time

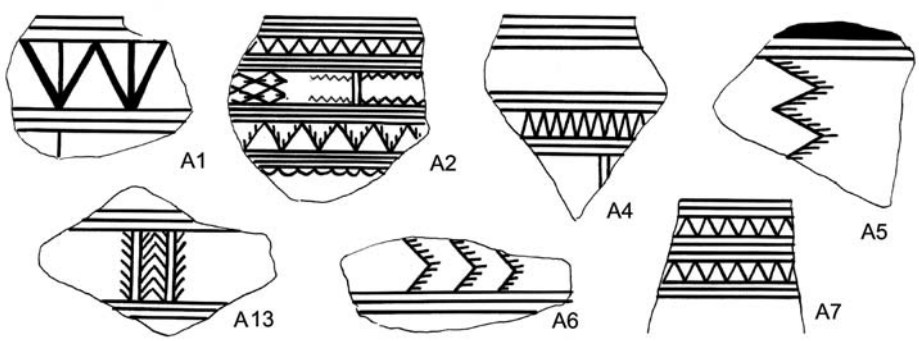

Fig. 7. Selected sherds from sounding A (not to scale; drawing L. Vanden Berghe).

of the excavations, there were 7 tenths and about 50 Khamseh nomads camping at a distance of merely 200 m from the site. They stayed at Tall-i Shogha for three months.

Vanden Berghe reported encountering Shogha style painted sherds at a depth of -0.70 m below the surface right until the bottom of his trench at -2.70 m. Sherd A1 with its pending triangles could, however, also be Taimuran ware. He registered 32 sherds (Fig. 7) but specifically mentioned that he did not recognize any traces of walls or constructions in this 2 m layer with Shogha sherds. He made a note in his field book stating that at least 12 to 15 m of archaeological deposits were to be excavated in order to reach the virgin soil but that with the limited time and the few workmen he had, such a deep trench could not be envisaged.

SOUNDING B (Fig. 4, 8)

Sounding B was a rectangular area of 4.70 × 2.50 m and was dug to a depth of -4.80 m below the surface. It was situated at the northern side of the mound, between two trenches excavated by Rad (Fig. 3, Pl. 2). There were no graves and again, no traces of walls or structures were recognized. Vanden Berghe reported Shogha and Qaleh ware sherds. At -0.90 m depth, he started to encounter Shogha sherds (Fig. 8, left). He noted that they were absent from about -2.75 m and that from then on until -3.50 m only Qaleh ware sherds were found (Fig. 8, right). Nothing is recorded about the remaining 1.20 m he excavated in sounding B. He registered a total of 30 sherds from sounding B, a selection of which is presented in Fig. 8.

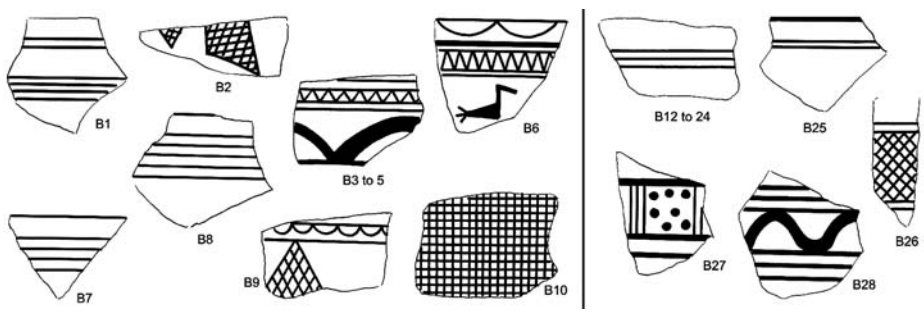

Fig. 8. Selected Shogha (left) and Qaleh/Kaftari sherds (right) from sounding B (not to scale; drawing L. Vanden Berghe).

SOUNDING C (Fig. 4, 9-10; Pl. 2, 4-7)

Vanden Berghe noted that "Sounding C" was not an actual sounding, but rather a cut in a wall section of one of the trenches of Rad along the northern edge of the mound. Nothing is registered about the extent or depth of this excavation. From his plan, however (Pl. 2), it seems some 4 by 2 m was excavated from Rad's trench towards the center of the mound. Without any drawings or photographs, it is impossible to evaluate Vanden Berghe's conclusions, but he stated that this sounding demonstrated that Rad had not only excavated a Shogha graveyard but had dug right into "dwellings".

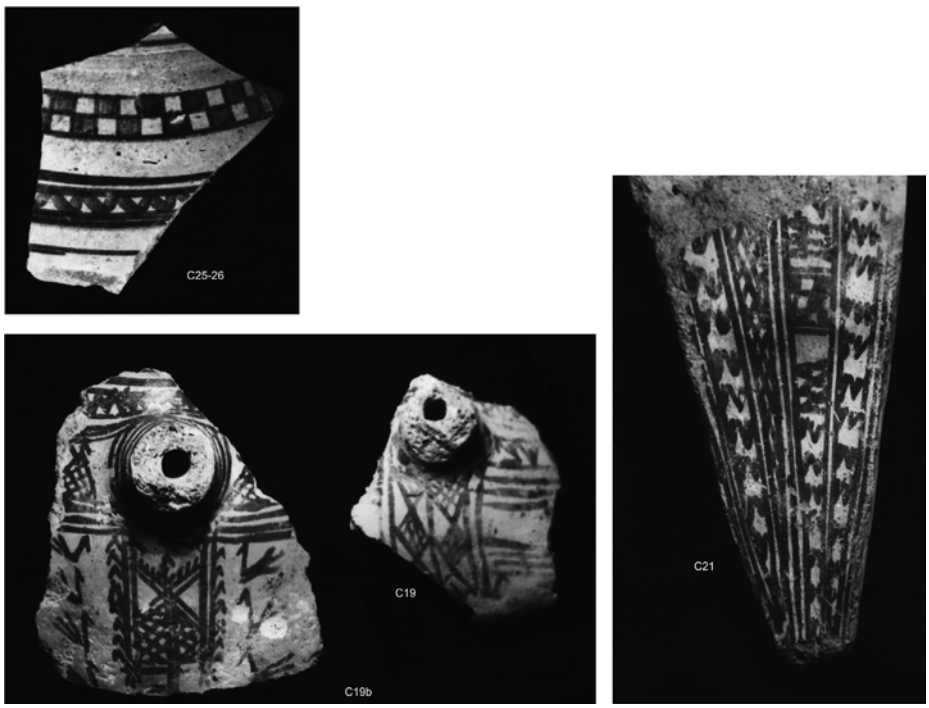

Fig. 9. Archive photos of Sounding C sherds. C25-26: Qaleh ware; C19 and C19b: Shogha ware spouted vessels; C21: leg of tripod Shogha vessel (compare C19, C19b and C21 on Vanden Berghe's drawing Pl. 4).

Vanden Berghe registered 24 Shogha sherds and 4 Qaleh sherds, which he said "stood out by their smoother yellowish to cream surface" (Fig. 9, Pl. 4-5). Furthermore, he mentions the discovery of 2 complete vessels. A painted grey-yellowish vessel with some red spots caused by irregular

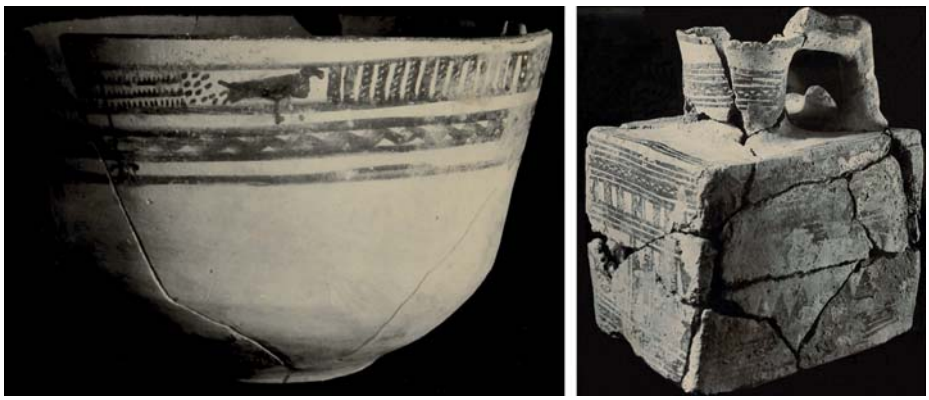

Fig. 10. Qaleh bowl and Shogha ware bottle from Sounding C (see Pl. 6-7).

firing was found at a depth of -0.55 m (Pl. 6-7). The 22 cm high vessel has a rectangular body (18 by 13 cm) and a neck with two parallel handles of which one is missing (Vanden Berghe 1952: 218, pl. LIV). The second vessel is a Qaleh bowl (Fig. 10, Pl. 6) and was found at about the same depth, at -50 cm (Vanden Berghe 1952, pl. LIIIa; 1959: 267, Pl. 53a).

SOUNDING D (Fig. 4, 11-19; Pl. 2, 8-11)

Sounding D, on the northeastern slope of the mound, was the largest and most important of his soundings (Fig. 4, Pl. 2). It measured 23 × 5 m and reached a depth of -1.50 m. An area of 4 × 5 m was further excavated to a depth of -2.50 m to reach virgin soil.

Some six graves were identified. Furthermore, two large "groups" of pottery were discovered. Vanden Berghe suggested that these possibly indicated two or more interments of which the skeletons had completely decayed (see infra). Some 19 sherd-numbers were registered, 9 Shogha and 9 Qaleh / Kaftari ware. The Qaleh and Kaftari sherds were reportedly found at a lower level than the Shogha sherds. However, an exact depth (-1.70 m), is known only for one Qaleh sherd (fig. 11 and Pl. 11).

The six skeletons were found at a depth between -0.60 and -1.60 m. The bodies were placed on the side in a contracted posture and in four of the six graves, the face was oriented to the northeast. The "walls" of the graves were described as of "dried clay with straw" but since no clear delineated structures were registered, these "walls" may also have been

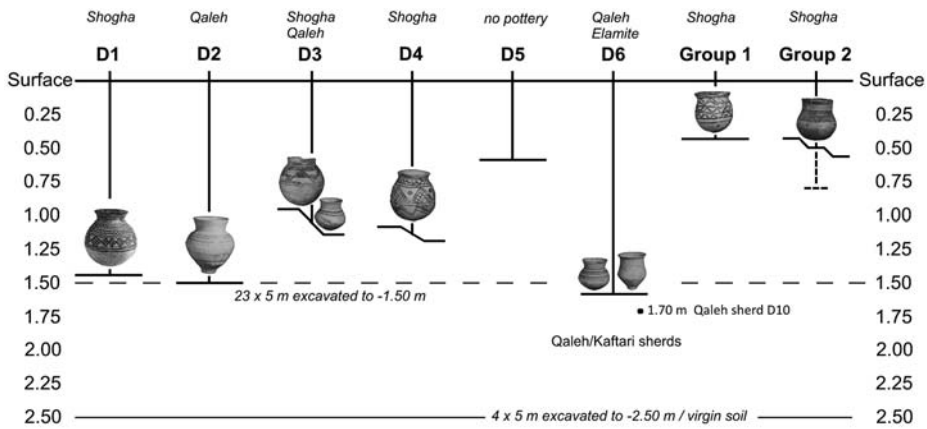

Fig. 11. Schematic survey of sounding D with identification of ceramic wares.

remains of mud brick structures or dwellings into which the graves had been dug. Pottery was usually placed near the head, and in three tombs (D3, 4 and 6) it was also deposited near the feet. Other burial goods included copper-alloy blades and jewellery. Whenever jewellery was found, the excavator supposed that the skeletons were female. The gender was, however, never objectively determined. Furthermore, animal bones and skulls were discovered in several graves.

Grave D1 (Fig. 11-12)

This grave was excavated on 2 June 1951 and measured according to his sketch 1.40 m by 0.70 m. The skeleton was found at a depth of -1.45 m and was placed on its right side in a contracted posture with the head oriented to the southwest (towards the center of the mound). Two Shogha jars and a Qaleh beaker (nrs D1/1-3) were placed above the head and in front of the feet lay a copper alloy object (D1/4). The skeleton measured 95 cm from head to toe in its contracted posture. The excavator noted that the grave's walls consisted of "dried clay with straw" (Vanden Berghe 1952: 224, pl. 51).

D1/1. Jar; grey clay, painted decoration: horizontal lines, zigzag bands and band with crosshatched squares. H. 19 cm, top diam. 10 cm. (Vanden Berghe 1952: 225, pl. 52, center right / Vanden Berghe 1966: 21 nr 15; Vanmoerkerke 1991: 131-132, nr 8, fig. 6c).

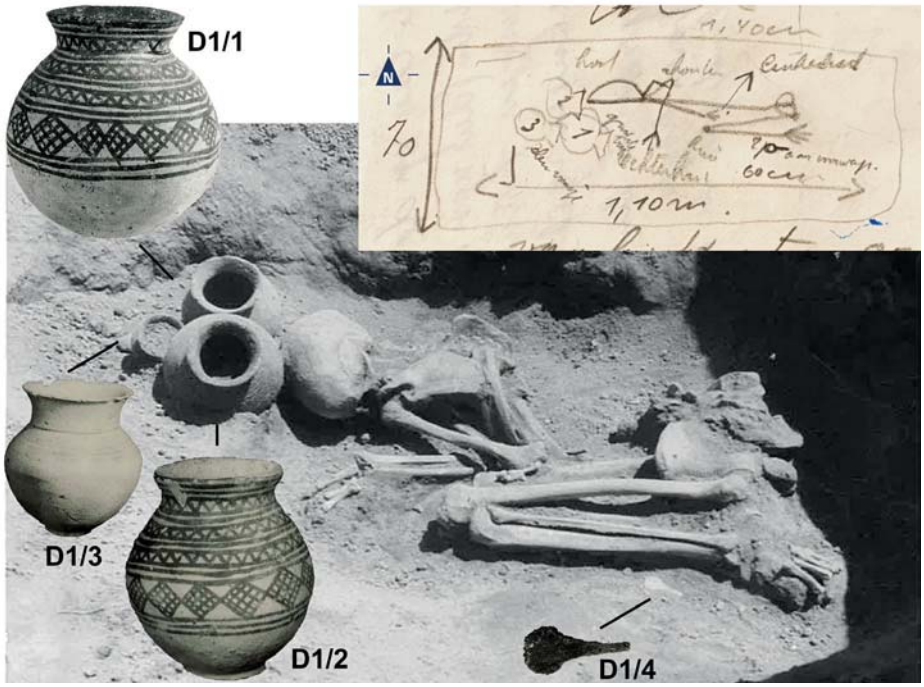

Fig. 12. Tall-i Shogha sounding D, Grave 1 (Photos and sketch L. Vanden Berghe).

D1/2. Jar; grey clay, painted decoration: horizontal lines, zigzag bands and band with crosshatched squares. H. 17 cm, top diam. 10 cm. (Vanden Berghe 1952: 255, pl. 52, center).
D1/3. Small jar; yellow-brown surface, painted decoration: horizontal lines on the shoulder. H. 10 cm, top diam. 7 cm. Qaleh ware.
D1/4. Copper alloy object (disk headed pin?).

Grave 1 was close to grave 2; the distance between the skulls of the two graves was about 0.80 m (Fig. 13). Vanden Berghe reported that there was "no wall of dried clay" separating the two skeletons and suggested that it may have been a "double burial". There are no detailed drawings to corroborate this, however, only sketch Fig. 13. In view of the relative position of both skeletons and the distribution of the burial goods, it seems rather unlikely that it was one grave with two corpses. He noted the size of this "double interment" would have been 2.65 × 1.10 m.

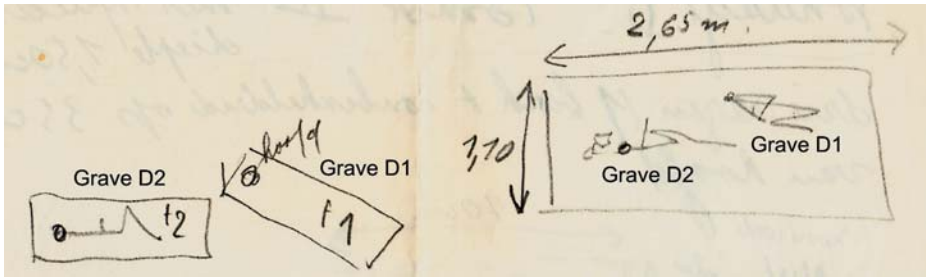

Fig. 13. Vanden Berghe's sketches of graves 1 and 2. Left interpreted as two separate inhumations; right as a single grave with two skeletons.

Grave D2 (Fig. 11, 14)

The skeleton was found at a depth of 1.50 m. The deceased was placed on the left side with the face turned towards the northeast (direction of the Kuh-i Rahmat). The skeleton measured 0.90 m from head to toe in its contracted posture. Four jars (nrs D2/1-4) were found near the head; two painted Qaleh vessels and two Elamite plain buff jars. The association of these two pottery traditions has been well documented more to the west, at Tall-i Malyan (Carter 2011: ch. viii, fig 30.4; Potts, Roustaei, Weeks & Petrie 2009: 11).

Fig. 14. Plain buff ware and painted Qaleh ware from grave D2 (photographs L. Vanden Berghe).

D2/1. Jar; yellowish surface, not painted. H. 25 cm, top diam. 10 cm. plain buff ware.
D2/2. Jar; yellowish surface, not painted. H. 20 cm, top diam. 8 cm. plain buff ware.
D2/3. Jar; yellowish brown surface, painted decoration: horizontal red-brown bands on shoulder, band on inside rim. H. 12 cm, top diam. 7 cm. Qaleh ware.
D2/4. Jar; cream coloured surface, painted decoration of five parallel dark brown bands. H. 11 cm, top diameter 7 cm. Qaleh ware.

Grave D3 (Fig. 11, 15-16, Pl. 8)

Grave D3 measured 0.70 × 1.60 m and was found at a depth of 0.90 to 1.15 m. The skeleton was placed on its left side with the face oriented to the northeast (Fig. 15). It measured 1 m from head to toe in its contracted posture.

The deceased had copper alloy "earrings", a "knife" near the neck (not documented) and a toggle pin on the chest (Fig. 16). Because of the jewelry the excavator assumed it was a woman's grave. Four Shogha

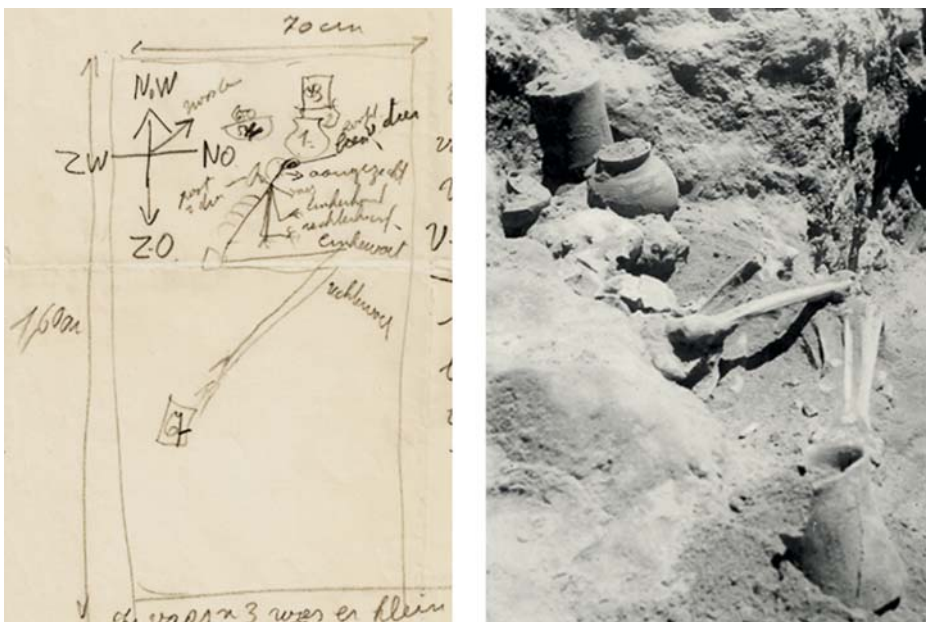

Fig. 15. Vanden Berghe's sketch and photo of grave D3.

Fig. 16. Copper alloy finds from grave D3: a fragmentary toggle pin and set of earrings.

vessels and one Qaleh vessel were found near the head (nrs D3/1-5). An animal head (species not noted) was placed in front of the skull, an animal's leg and a second head was positioned behind it. Three animal ribs were found inside dish nr D3/4, together with the small vessel nr D3/5. Near the feet, one more Shogha beaker was discovered (nr D3/6).

D3/1. Jar; red colour, grey core, black painted decoration: horizontal lines, zigzag band and band with sets of 4 vertical lines. H. 19 cm, top diam. 12 cm.

D3/2. Jar; grey coloured surface with some oxidized red spots, black painted decoration: horizontal lines, double zigzag band and a band with alternating crosshatched triangles. A "salt-like substance" was discovered in the jar. H. 17.5 cm, top diam. 10 cm. (Vanden Berghe 1952: 225, pl. 52, center left)

D3/3. Beaker; grey coloured with oxidized red spots, black painted decoration: horizontal lines, zigzag band and band with chess pattern. H. 16 cm, top diam. 16 cm.

D3/4. Bowl; red surface colour, grey core, black painted decoration on inside (crossed lines, triangles, curved lines …) and outside (zigzag line between sets of 3 horizontal lines). Three animal ribs and vessel D3/5 were found in this dish. H. 6.5 cm, top diam. 16 cm.

D3/5. Jar; red colour, black painted decoration: parallel bands and short vertical stripes. This small jar was found inside bowl nr D3/4. H. 10 cm, top diam. 7 cm. Qaleh ware.

D3/6. Beaker; grey colour with oxidized red areas, black painted decoration: zigzag bands and horizontal lines, vertical zigzags, plant-like motives and birds. H. 15 cm, top diam. 11 cm.

D3/7. Copper alloy toggle pin; found at the chest (tip missing).

D3/8. Four copper alloy "earrings".

Grave D4 (Fig. 11, Pl. 9)

This grave, at the depth of -1.10 to -1.20 m, was badly preserved with only fragments of the skeleton's legs and feet remaining. The feet pointed to the northeast (towards the Kuh-i Rahmat). Five vessels (nrs D4/1-5) were found where the skeleton's head would have been and five more vessels (nrs D4/6-10) and an animal head (possibly a cow) near the feet (Pl. 9). The leg of a "small animal" was found underneath two large vessels at the feet.

Only 5 of the vessels were photographed, the others were simply described or rough sketches of their shape and decoration were made.

D4/1. Jar; red fired with grey core, red-brown painted decoration: zigzag bands, crosshatched triangles and dots. H. 15 cm, top diam. 9.5 cm.

D4/2. (no illustration available) Jar; identical shape, colour and decoration as D4/1. H. 14 cm, top diam. 10 cm.

D4/3. Jar; grey colour, dark brown painted decoration: horizontal lines, zigzag band, crosshatched triangles. H. 13.5 cm, top diam. 9.5 cm.

D4/4. Jar; grey colour, dark brown painted decoration: horizontal lines and zigzag bands. H. 8.5 cm, top diam. 7 cm.

D4/5. Bowl; grey-red colour, no painted decoration. H. 4 cm, top diam. 7.5 cm.

D4/6. Jar; grey colour, dark brown painted decoration: two zigzag bands and band with alternating cross-hatched triangles separated by dots. H. 15 cm, top diam. 11 cm.

D4/7. (only sketch of decoration available) Jar; shape like D4/6, grey colour, dark brown painted decoration: a band with geometrical pattern, a band with cross-hatched triangles and a zigzag band. The jar was in poor condition and deposited at the Persepolis museum. H. 11 cm, top diam. 9 cm.

D4/8. (only sketch available) Bowl on hollow foot of 6 cm; no painted decoration. H. 16 cm, top diam. 21 cm.

D4/9. (only sketch of decoration available) Jar; grey colour, dark brown painted decoration: zigzag band and a band with cross-hatched triangles. The jar was placed inside vessel nr 8. Deposited at the Persepolis museum. H. 12 cm, top diam. 9.5 cm.

D4/10. (no illustration available) Small bowl; grey-red colour, no painted decoration. H. 4.5 cm, top diam. 8 cm.

Grave D5 (Fig. 11)

At -0.60 m depth, a skeleton was found lying on its right side in contracted posture and with the face oriented to the northeast. The deceased wore a "hair pin" (found at the back of the head) and a finger ring. The length of the contracted skeleton was 0.80 m. No pottery was found; the hairpin and ring were not documented.

Grave D6 (Figs. 11, 17)

Vanden Berghe noted that the skeleton of grave D6 was found at a depth of -1.60 m which indicates that it must have been found in the extended area (4 × 5 m) of sounding D where he had excavated beyond the -1.50 m limit in order to reach virgin soil. The contracted skeleton was placed on its left side in northeasterly direction with the face directed upwards, the right hand on the chest and the left arm and hand stretched towards the hip (similar to grave D2). The length from head to toe in its contracted posture was about 1.35 m. Near the deceased's head were three Qaleh vessels (No. D6/1-3) and reportedly several sherds (not documented). The small vessel D6/3, almost identical to D3/5, compares to those from Qaleh graves at Tall-i Taimuran (Overlaet 1997: 43-47, Fig. 27-28). Behind the head, an animal bone was found. One more Qaleh vessel (nr D6/4) and a copper alloy double edged blade were found near the feet.

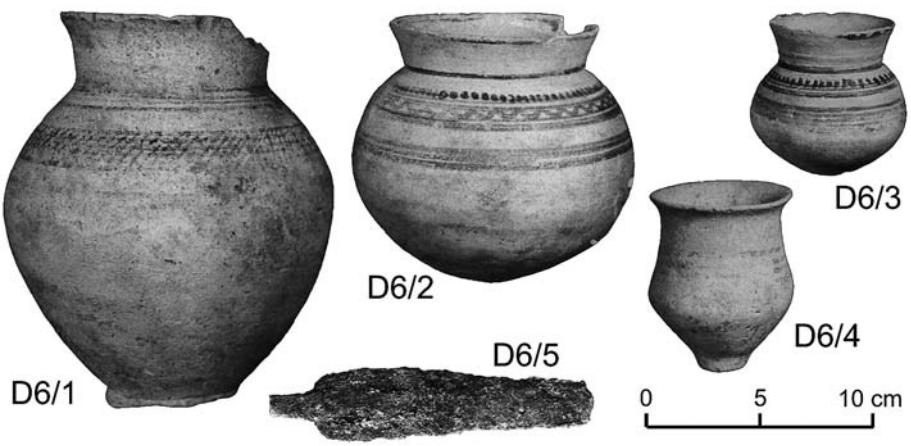

Fig. 17. Qaleh burial goods of grave D6 (photo L. Vanden Berghe).

D6/1. Jar; yellow-grey colour, black painted decoration: four parallel lines below the neck and a band with striations on the shoulder. H. 19 cm, top diam. 10 cm. Qaleh ware.

D6/2. Jar; yellow-grey colour, dark brown painted decoration: parallel lines on rim, neck and shoulder, one with small vertical stripes, a zigzag band on the shoulder and three parallel lines on the body. H. 13 cm, top diam. 10.5 cm. (Vanden Berghe 1955-56, Pl. IX:2) Qaleh ware.

D6/3. Jar; yellow-grey colour, brown-black painted decoration: parallel lines on the shoulder with small vertical stripes on the top line and parallel lines on the neck. H. 8 cm, top diam. 6.5 cm. (Vanden Berghe 1955-56, Pl. IX:1) Qaleh ware.

D6/4. Beaker; yellow-grey colour, black painted decoration: four parallel lines on the upper part of the body. H. 9 cm, top diam. 7 cm. Qaleh ware.

D6/5. Copper alloy double-edged blade with flat tang.

Groups 1 and 2 (Fig. 11, 18, Pl. 10)

The excavator lists another 36 complete vessels that were apparently found in two "groups". Vanden Berghe assumed these vessels represented burials of which the skeletons had completely decayed and which were simply not recognized as interments. Given the numbers of vessels in comparison with the amount of vessels in graves D1 to 6 (max. 10), there may have been several graves within each of these two "groups".

Group 1 would have been found at a depth of -40 cm (vessels DGr1/1 to 15), Group 2 at depths of -40, -50 and -60 cm (DGr2/16 to 36). However, the small teapot DGr2/25 is now in the collection of the Royal Museums (Inv. IR.2506) and is listed in his notes as found at -40 cm depth while on the side of the vessel he wrote in pencil "CH" (for "Chogha") and "80 cm".

The discovery of this large number of vessels seemingly overwhelmed the excavator and he was not able to register their exact locations and groupings in detail. He merely listed them, made some sketches and photographed a few of them.

The following list recaptures the available information. It can possibly be used to identify those vessels in the Persepolis and Tehran museums and in private collections. Whereas most appear indeed to be Shogha ware, some may be of later date (e.g. Pl. 10:24).

Sounding D Group 1:

DGr1/1. Jar; yellow-grey colour, red-brown painted decoration: zigzag band and two bands with curved line. H. 8 cm, top diam. 7 cm.

DGr1/2. Jar; grey colour with red spots, black painted decoration: parallel lines, zigzag band and sets of vertical lines. H. 7 cm, top diam. 5.5 cm.
DGr1/3. Jar; grey colour with red spots, black painted decoration: parallel lines and zigzag band. H. 6 cm, top diam. 4.5 cm.
DGr1/4. Jar; grey-brown colour, black painted decoration: black band. H. 7 cm, top diam. 5.5 cm.
DGr1/5. Jar; grey-red colour, brown-black painted decoration: three parallel lines. H. 8 cm, top diam. 6 cm.
DGr1/6. Jar; grey-red colour, brown-black painted decoration: pattern of horizontal and vertical lines. H. 6 cm, top diam. 5 cm.
DGr1/7. Jar; grey-red colour, brown-black painted decoration: pattern of horizontal and vertical lines. H. 6 cm, top diam. 5 cm.
DGr1/8. Beaker, top part lost; red colour from firing, red-brown painted decoration: zigzag bands, humans, birds, stars and geometric motives (landscape?). H. ca. 9 cm, top diam. 9 cm.
DGr1/9 to 11. Beakers, similar to DGr1/8; linear decorations. H. 8 cm, top diam. 8 cm / H. 7.5 cm, top diam. 7 cm / H. 9.5 cm, top diam. 10 cm.
DGr1/12. Small bowl; grey colour, black painted decoration along rim: four horizontal bands. H. 4.5 cm, top diam. 9 cm.
DGr1/13-14. Small bowls like DGr1/12; not painted. H. 5 cm, top diam. 7.5 cm / H. 5 cm, top diam. 7.5 cm.
DGr1/15. Bowl ("salt cellar"); not painted. H. 4 cm and top diam. 6 cm.

Fig. 18. Small teapot from sounding D, Group 2 nr 25. H. 8 cm (RMAH, Brussels, inv. IR.2506).

Sounding D Group 2:

DGr2/16. Tripod bowl; black-grey colour, not painted. H. 10 cm, top diam. 13 cm.

DGr2/17. Beaker; grey-red colour, not painted. H. 8 cm, top diam. 9.5 cm.

DGr2/18. Jar; yellow-brown colour, well fired, brown-black painted decoration: horizontal lines and zigzags. H. 9 cm, top diam. 8 cm.

DGr2/19. Jar; red colour, black painted decoration: horizontal lines and zigzags. H. 8.5 cm, top diam. 7 cm.

DGr2/20. Jar; grey-yellow colour, black painted decoration: horizontal lines, cross-hatched panels. H. 10 cm, top diam. 7 cm.

DGr2/21. Jar; brown-red colour, black painted decoration: horizontal lines and one single dot. H. 7 cm, top diam. 6.5 cm.

DGr2/22. Jar; grey-red colour, black painted decoration: parallel lines, zigzags, stars, birds (?). H. 14 cm, top diam. 9 cm.

DGr2/23. Jar; red colour, black painted decoration: horizontal lines, zigzags, festoons, vertical line patterns. H. 11 cm, top diam. 8.5 cm.

DGr2/24. Pitcher; grey-black colour, incised lines, not painted. H. 17 cm.

DGr2/25. Teapot; red slip, impressed dots. H. 8 cm. RMAH, Brussels, inv. IR.2506.

DGr2/26-35. Jars similar in shape to DGr2/19; not painted.

DGr2/36. Beaker; similar in shape to DGr2/17.

SOUNDING D sherds (Fig. 11, 19, Pl. 11)

The excavator registered some 20 sherds from sounding D (19 numbers; D13 covers 2 sherds), 10 Shogha and 10 sherds that Vanden Berghe classified at the time as Qaleh ware (Fig. 19, Pl. 11). Noticeable among the first group are two unpainted tripods legs, one of these has the shape of an ungulate's paw (Fig. 19: D7). The excavator noted that all the "Qaleh" sherds were found at a "lower level" than the Shogha sherds. The *exact* depth of only one sherd is written down in his notes, however (sherd D10; Fig. 11 and Pl. 11). Two of his Qaleh sherds (registered as D13) can now be classified as Kaftari ware. The left directed plump birds are very different from those on Qaleh sherds (compare Tch.22: Fig. 6, Pl. 3) and are typical Kaftari (Sumner 1972: 48). More of his Qaleh sherds may in fact be Kaftari but the drawings and the occasional black and white photograph do not always allow this distinction. The painted decoration on sherd D15 (Pl. 11), for example, is found on Kaftari as well as on Qaleh ware (see Nickerson 1983: 139-140, Fig. 39pp).

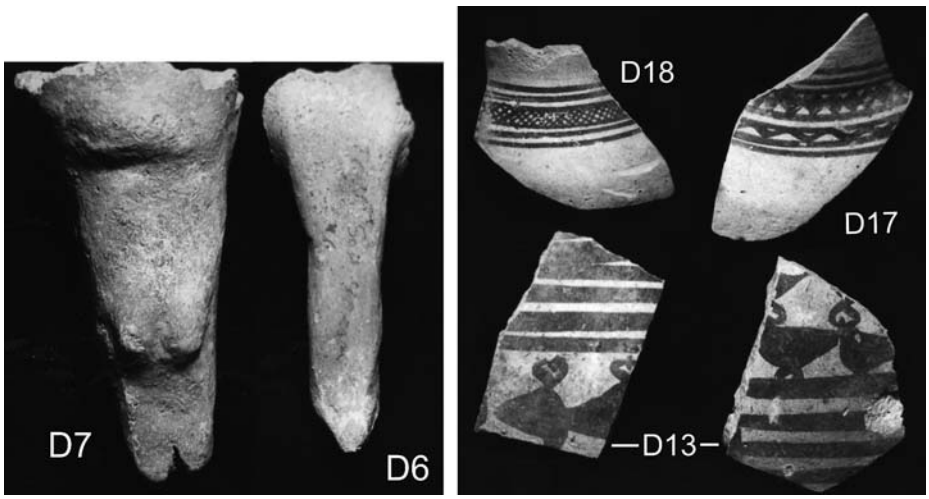

Fig. 19. Unpainted tripod feet and Qaleh / Kaftari painted sherds from sounding D (photos L. Vanden Berghe archive).

SOUNDING E (Fig. 4, 20, Pl. 2)

Sounding E is located on the northeastern slope of the mound. There is no information on the size of the sounding but it was a 1 m deep sounding inside the 1 m deep excavation of Rad. A small beaker (H. 11 cm, top diam. 6.5 cm) and several Qaleh sherds were registered but no Shogha ware. As far as we know, Rad only excavated Shogha ware graves and the discovery of Qaleh ware beneath the 1 m he excavated would thus be in line with the results of soundings B, D and FG.

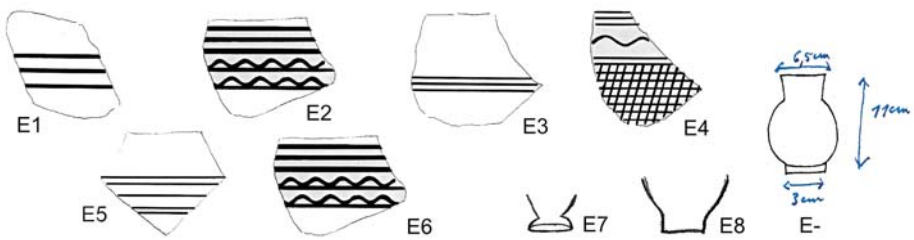

Fig. 20. Qaleh sherds and beaker from sounding E (not to scale; drawings L. Vanden Berghe).

SOUNDING FG (Fig. 4, 21)

Soundings F and G were combined to a single sounding "FG". It was a small sounding on the southern slope of the mound, like sounding E inside the excavated area of Mahmud Rad. Among the finds were some Tall-i Qaleh type sherds and the lower half of a female statuette in baked clay (H. 8.5, W. 3.5 cm). Sumner reported on such female figurines from several Kaftari sites in the Kur River Basin (Sumner 1972: 47, pl. 32-34).

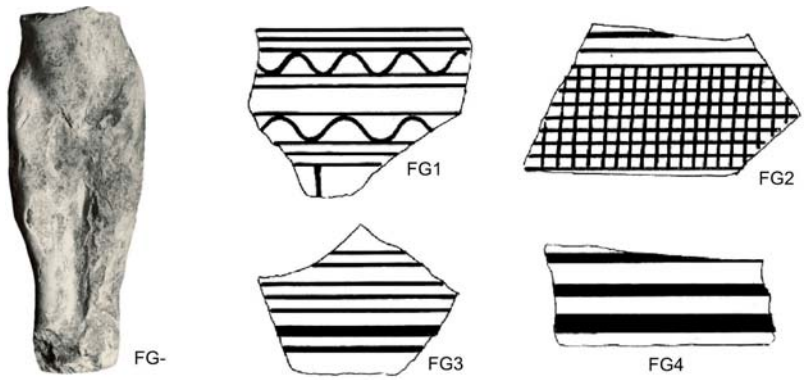

Fig. 21. Statuette fragment (H. 3.5 cm) and sherds from sounding FG (not to scale; photograph and drawings L. Vanden Berghe).

Final remarks

The soundings of Louis Vanden Berghe at Tall-i Shogha had never been reported on in detail and although the data registration was not very detailed, even after more than 65 years, his notes still allow to add some new information. In the absence of any reports on Mahmud Rad's excavations in the 1940's, they still are the only documented excavations at the site. The excavations and surveys all demonstrated the abundance of Shogha ceramics, both Rad and Vanden Berghe found graves with Shogha pottery. Although clearly a major Shogha site, the mound has a much longer history. Vanden Berghe's files not only confirmed the presence of Qaleh ware — which could be largely contemporary to Shogha ware — but also of Kaftari ceramics. His excavations did not produce Bakun ware, but the surface surveys by the Japanese team and by Sumner identified Bakun as well as Kaftari ware. They also registered Late plain ware, indicating that the mound remained important up to the Achaemenid era. In 1951, Late Plain ware had not yet been recognized as a diagnostic group

and since Vanden Berghe concentrated on prehistoric painted wares, the absence of this ware from his documentation is not surprising.

Noteworthy is the limited presence of Taimuran ware among Vanden Berghe's sherds (Fig. 7, sherd A1?; Pl. 3: surface sherd 51:10). Also the Japanese survey lists few Taimuran sherds as opposed to the masses of Shogha ware among the 432 sherds. Jacobs counted 32 Taimuran against 123 Shogha sherds, a ratio of only 1 on 5 (Jacobs 1980: 215).

Sumner and Nicol suggested that the more or less contemporary Shogha and Taimuran wares in the Kur River Basin would reflect distinct life styles. They linked Taimuran ware to pastoralist groups and Shogha ware to a sedentary population. A shift towards Taimuran ware in the later levels of Tall-i Darwazeh and the shrinking of settlement size in the southeast part of the Kur River Basin, possibly as a results of documented droughts towards the end of the 2nd millennium BCE, were seen as an indication for a growing importance of the pastoralist lifestyle. This lifestyle/pottery connection and other more extreme theories about the identities of the Fars populations remain very speculative, however (Overlaet 2007: 72-74; Potts 2013: 132). In the end, more systematic excavations on the Fars mounds are necessary and the long documented settlement of Tall-i Shogha makes this site a likely candidate to provide useful stratified sequences.

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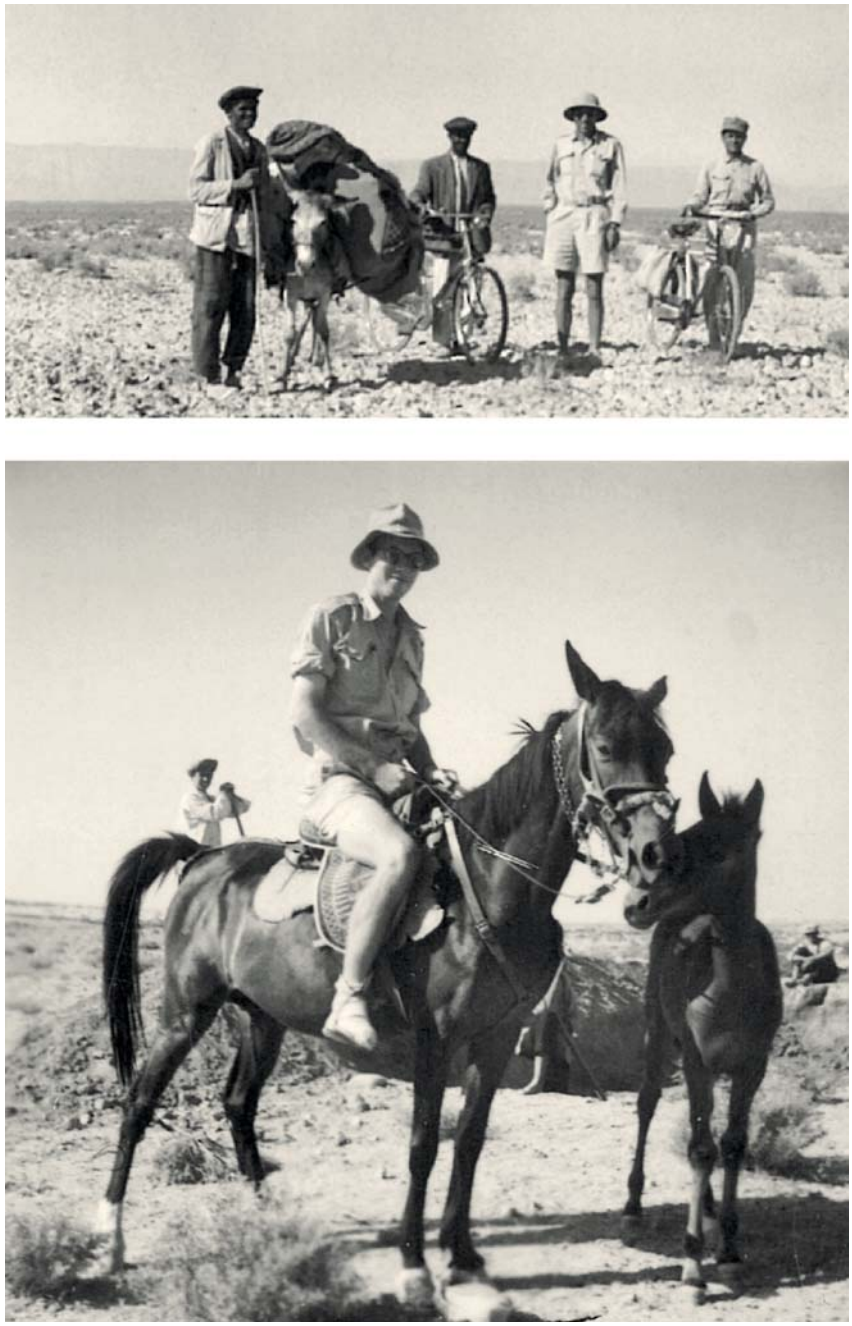
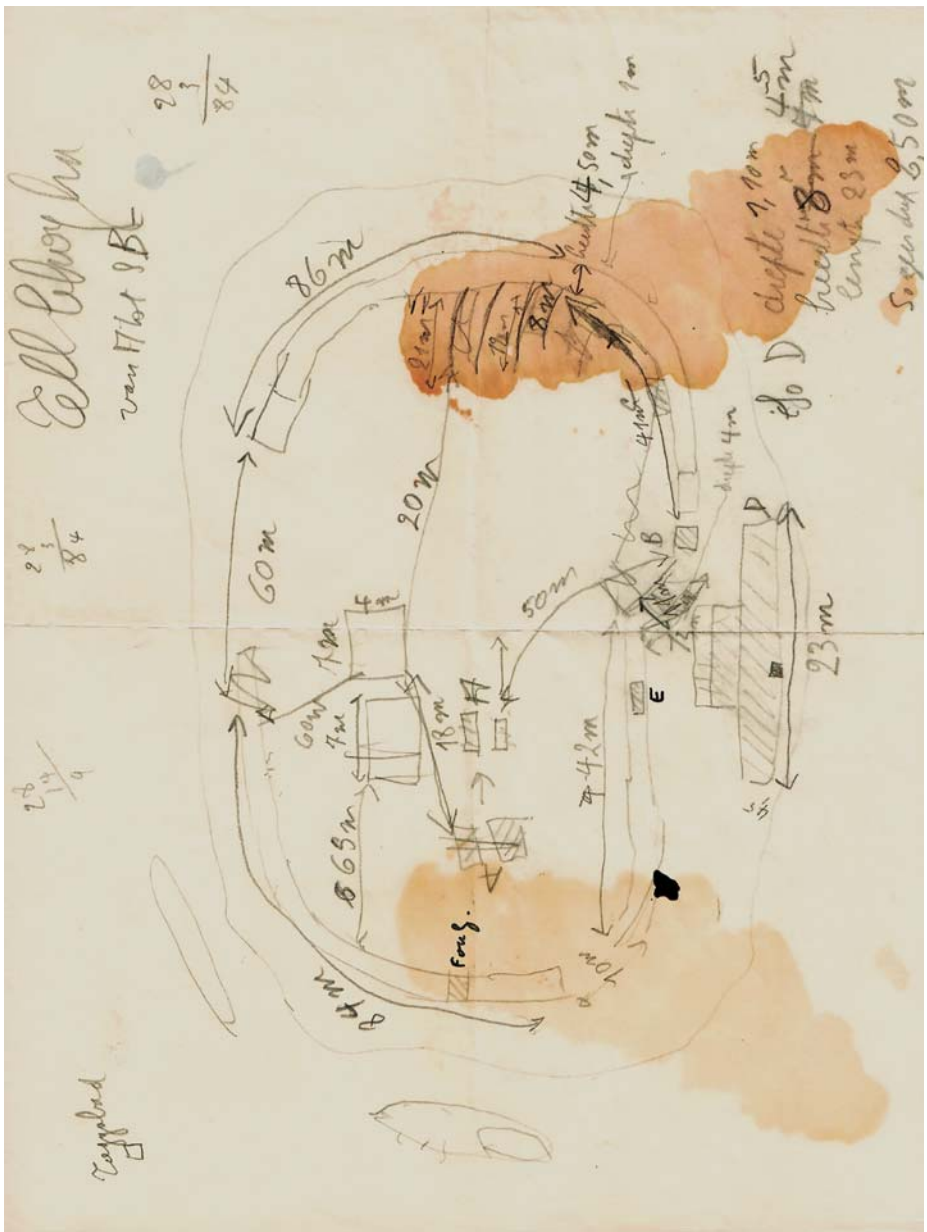
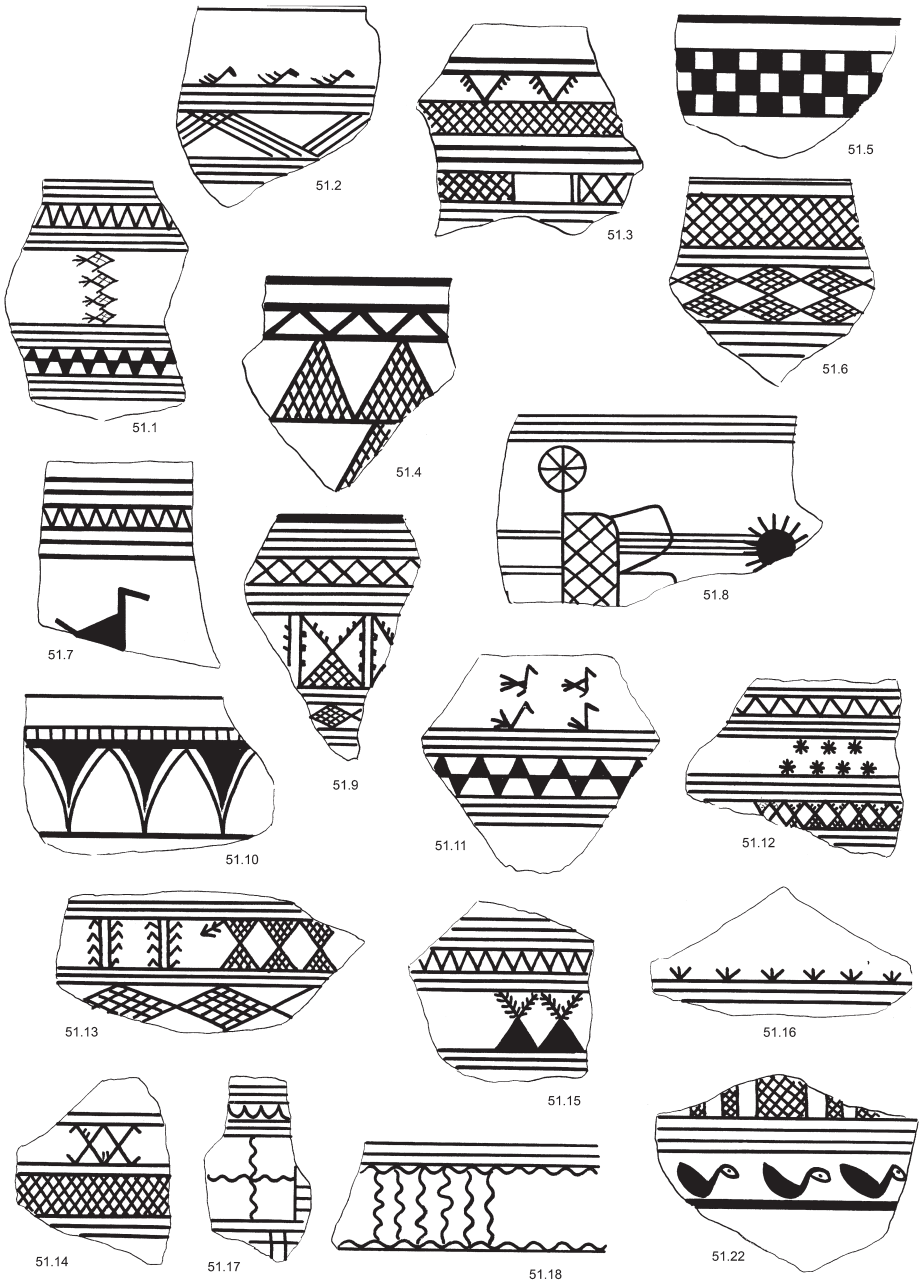


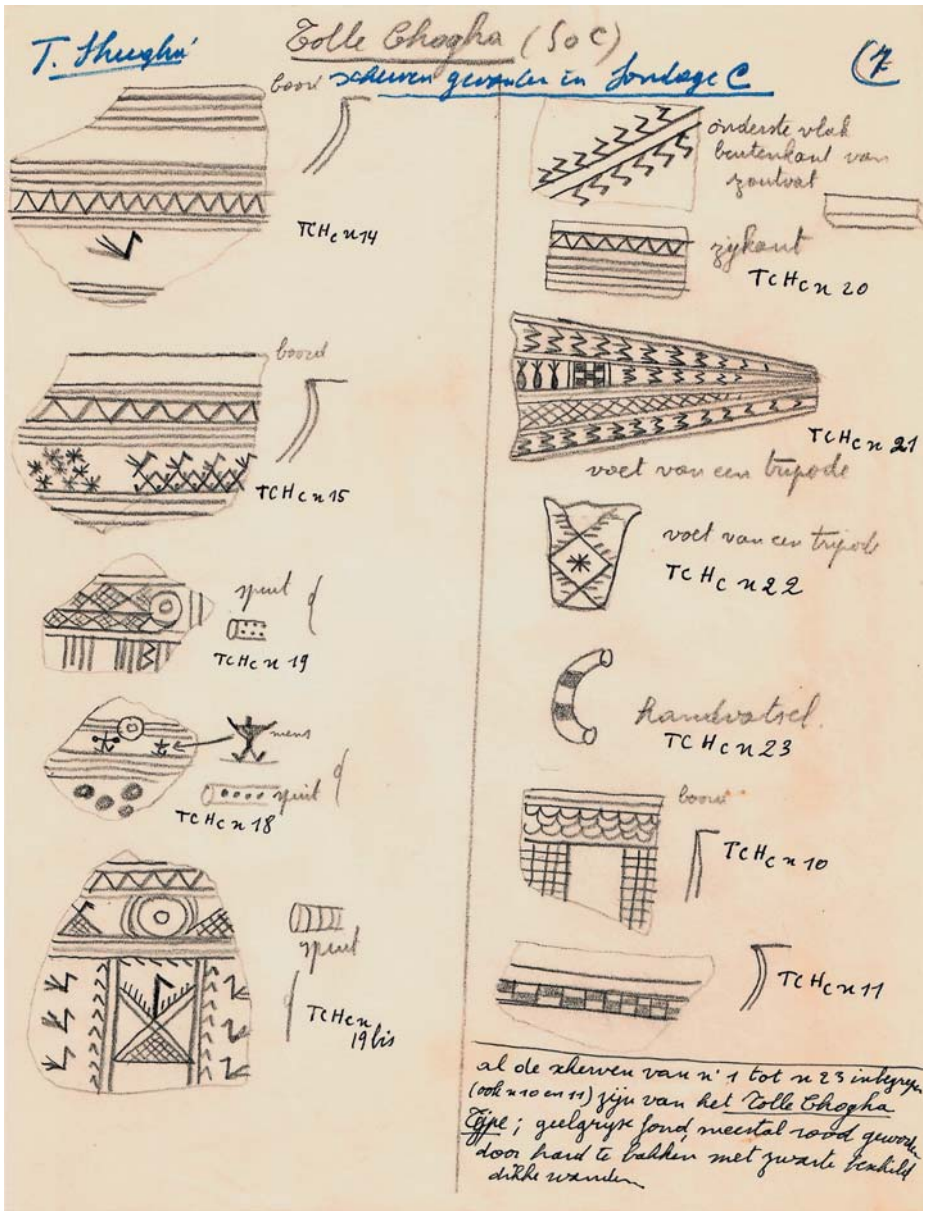
Pl. 1. Louis Vanden Berghe moving camp during his Fars survey (top) and posing on horseback in front of one of his excavations (site unknown).



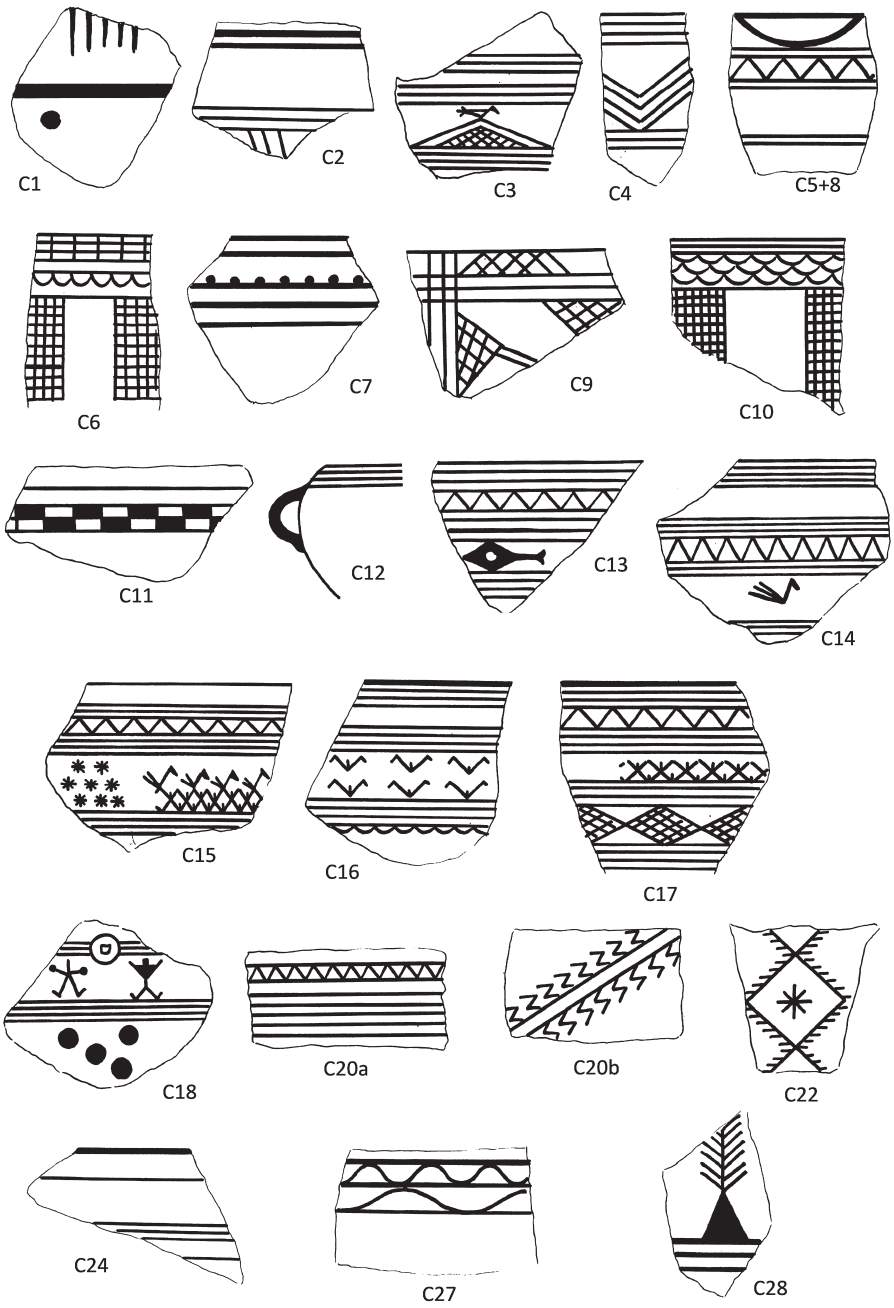
Pl. 2. Vanden Berghe's sketched map of Tall-i Shogha.



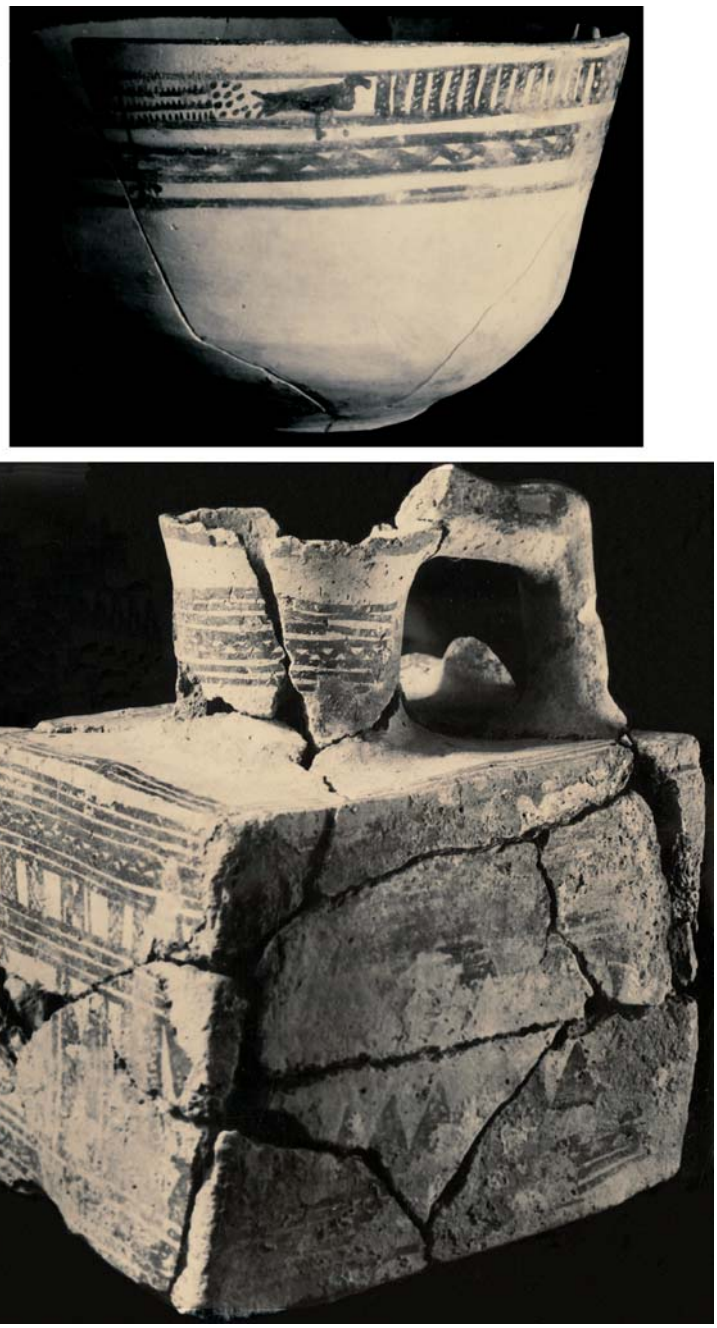
Pl. 3. Vanden Berghe's drawings of Tall-i Shogha surface sherds (compare Fig. 4).



Pl. 4. Vanden Berghe's field sketches of Sounding C sherds (compare Pl. 5 and Fig. 9). Vanden Berghe's handwritten comment states that all these sherds are Shogha ware.

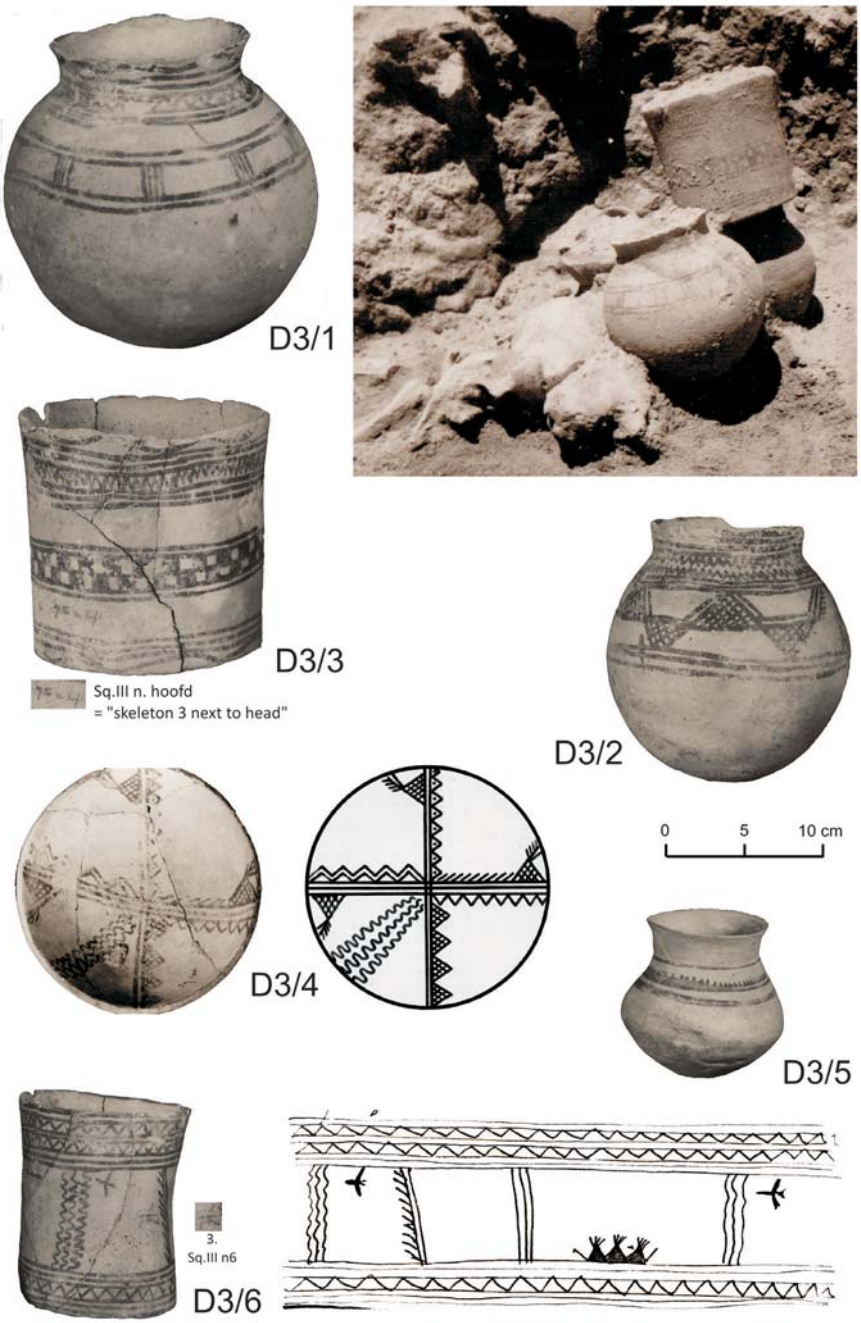


Pl. 5. Vanden Berghe's drawings of Sounding C sherds (compare Pl. 4).
His notes identify C24, C27 and C28 as "Qaleh ware".

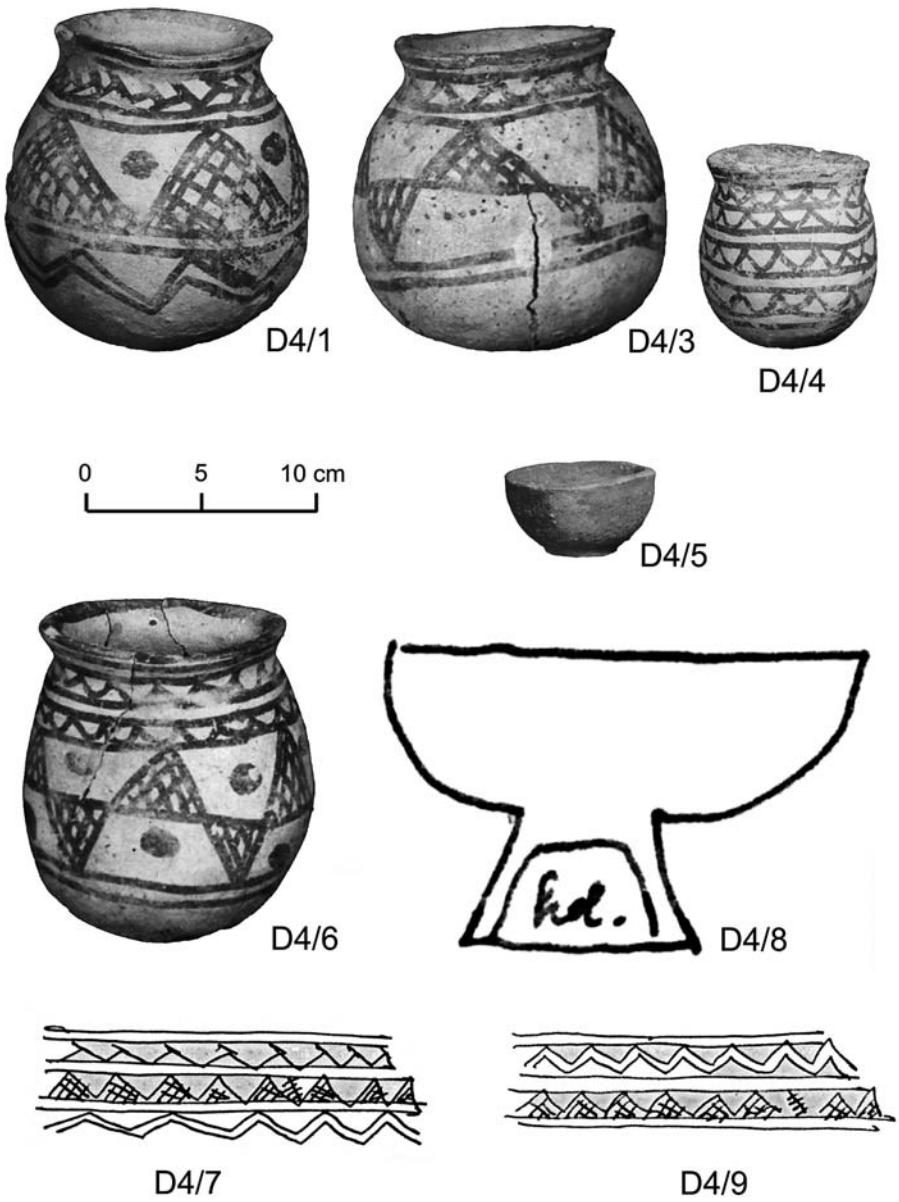


Pl. 6. Qaleh bowl and rectangular Shogha vessel from sounding C. 22 (H.) × 13 × 18 cm (photos L. Vanden Berghe).

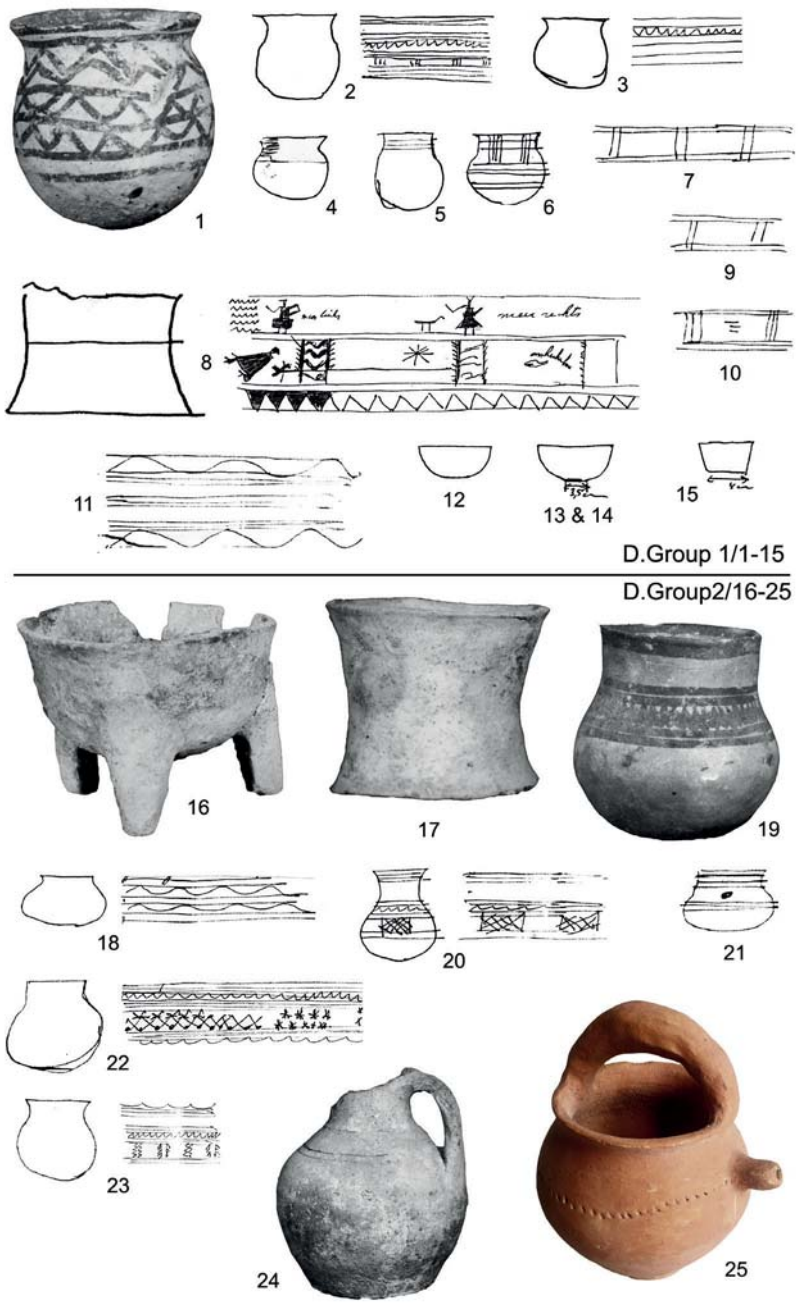
Pl. 7. Rectangular Shogha vessel from sounding C. 22 (H.) × 13 × 18 cm (drawn by Morteza Rostami).



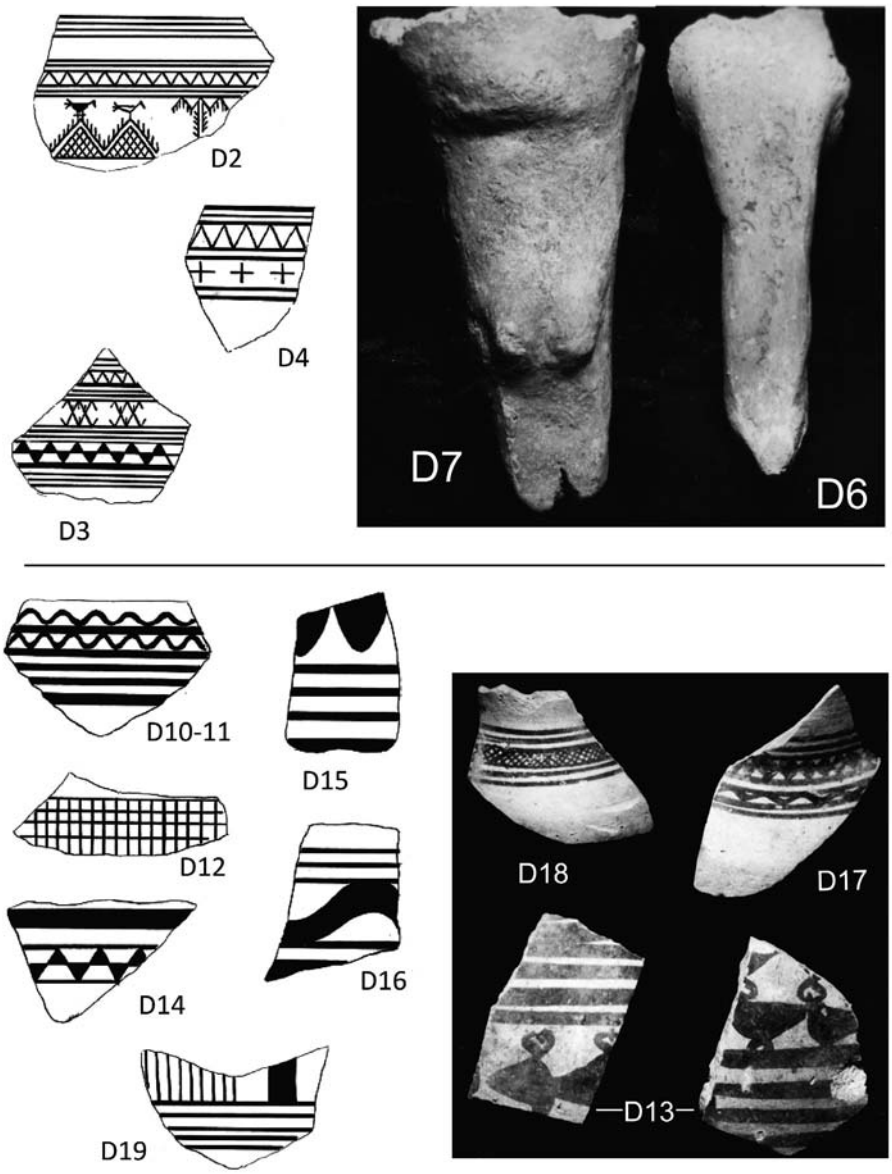
Pl. 8. Pottery from tomb D3 (drawings and photos L. Vanden Berghe).



Pl. 9. Pottery from tomb D4
(decoration of D4/7 and 9 not to scale; drawings and photos L. Vanden Berghe).



Pl. 10. Pottery from Sounding D 'Groups 1 and 2"
(not to scale; except nr 25, drawings and photos L. Vanden Berghe).



Pl. 11. Shogha and Qaleh / Kaftari sherds from Sounding D
(not to scale; drawings and photos L. Vanden Berghe).

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BALANOPHAGY IN IRAN: ANCIENT AND MODERN

BY

D.T. POTTS
(Institute for the Study of the Ancient World, New York University)

Abstract: The paper gathers the information on the human consumption of acorns as a foodstuff in Iran from antiquity to the 1970s. Acorns were a widely available, edible natural resource but required treatment in order to render them palatable and digestible. Acorn consumption was generally triggered by poor harvests and ensuing famines and mainly practiced by nomadic groups.

Keywords: Balanophagy, acorns, acorn bread, Luristan, Iran.

Introduction

Balanophagy (Lewthwaite 1989; Aurenche 1997), or the consumption of acorns as a foodstuff, was more widespread, in both space and time, than most scholars realize.[1] Archaeological and ethnographic literature detailing instances of acorn consumption, ranging from the Early-Middle Pleistocene to the present, and extending from North America, through Europe, North Africa, the Near East and East Asia, is abundant (Desfontaines 1797; Bainbridge 1985, 1986; Mason 1995; Wohlgemuth 1996; Hunt 2004; Rosenberg 2008; Mathews 2009; Deforce et al. 2009 for an excellent overview of the literature). Acorns are a source of lipids and carbohydrates (Johns and Duquette 1991: 221); vitamins A and C (Bainbridge 1986: 292-293); and antioxidants (Rakić et al. 2006). In addition to serving as a foodstuff, acorns have medicinal qualities. They 'have a styptic action because of the tannin they contain; they are used for colic pains in children, and as a gargle' (Hooper and Field 1937: 161; repeated without citation by Parsa 1960: 104). Some species with high levels of tannin are too astringent to be consumed without special treatment but while there is abundant ethnographic literature on the leaching of acorns to remove

[1] For assistance with several references I would like to warmly thank Bruno Overlaet and Willem Floor.

tannin, there is much less on the methods of processing acorns in antiquity (Wright 1994 for an overview and a report on grinding and crushing experiments). After observing that reliance upon acorns amongst Native American groups in California was 'strongly associated with a technology to leach the bitter tannin from the nuts and with implements for grinding', Bohrer could only speculate that, 'If both evidence of acorn consumption and knowledge of leaching were found in the Near East, the combined evidence might serve as some indication of the pre-agricultural importance of acorns in the diet' (Bohrer 1972: 150). In fact, as shown below, it is not only or even predominantly in the pre-agricultural past that acorns were a significant foodstuff.

Within the broad, cross-cultural study of balanophagy the acorns of the Persian (*Quercus brantii* var. *persica* Jaub. & Spach) or Holm oak (*Q. ilex* var. *ballota*) have received little attention.[2] In their studies of agricultural origins, for example, both Bohrer (1972) and Bainbridge (1985) cited only two examples of balanophagy in Iran. They noted the testimony of Mrs. Bishop who observed, while travelling amongst the Bakhtiyari in 1890, 'Among the trees and shrubs to be met with are an oak (*Quercus ballota* [*also Q. rotundifolia*, now commonly *Q. ilex ballota* or 'Holm oak']) which supplies the people with acorn flour' (Bird 1891: 290, n. 1, and 295). Bohrer and Bainbridge also referred to Hooper and Field (1937) who wrote that, 'In Kurdistan acorns are sometimes eaten raw, but they are usually roasted and the flour made into cakes' (Hooper and Field 1937: 161). Similarly, McCorriston (1994) cited Freya Stark who, while travelling in western Iran during the early 1930s, noted, 'Like the Golden Age…these people fed on acorns. They expected to do so this winter because of their rainless cornfields' (Stark 1934 [2001]: 88). As is to be expected from one of the leading scholars of Qajar economic history, Willem Floor (Floor 2003: 148) marshalled considerably more evidence, drawing on accounts by Alexander (1827), Baron de Bode (1845), Binning (1857) and Norden (1928).

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[2] Desfontaines 1790: 394 described 'une espèce de chêne connu sur les côtes de Barbarie, sous le nom de ballote, et dont les glands, aussi doux que la chataigne, servent de nourriture pendant une partie de l'hyver à un grand nombre d'habitans du Mont-Atlas.' The epithet *ballota* comes from Arabic *balūṭ* (cf. Kurdish *bālū'ṭ*; Rödiger and Pott 1840: 45; Houtum-Schindler 1884: 51). Cf. the Spanish loanword for acorn, *bellota*. See Layard 1846: 11, n. †.

In fact, apart from these few accounts, none of the authors just cited could marshall any actual archaeological evidence of acorn consumption in Iran. This is not surprising given that, in 1985, N.F. Miller wrote, 'acorns have not been found in archaeobotanical samples' from excavated sites in Iran (Miller 1985: 13). Thanks to recent research, however, this statement now needs to be modified, although the amount of new data remains small. Among the palaeobotanical remains recovered in excavations at the Chehr Abad salt mine in northwestern Iran were medlar and acorn (Ramaroli et al. 2010: 343). Because of the site's location, it has been assumed that the acorns had been brought there from somewhere else in Iran. The date of the Chehr Abad acorn remains is unclear, however, for radiocarbon dates from the mine range from the later Achaemenid (late 5th/early 4th century BC) to the mid-Sasanian era (early 3rd/6th century AD) (Pollard et al. 2008: Table 1). If some of the acorns should date to the earlier end of this time spectrum, they would overlap chronologically with our earliest ethnographic description of acorn consumption in Iran (see below).

What follows is a small dossier of references to balanophagy in Iran extending in time from the antiquity to the 1970s. These demonstrate several things. First, that acorn consumption was mainly, though not exclusively, practiced by nomadic groups. Second, that acorn consumption was generally triggered by poor harvests and ensuing famines. Third, that Iranian acorns require treatment, generally through leaching, in order to render them palatable and digestible. And fourth, that acorns constituted a widely available, edible natural resource which was not subject to the rapacious tax regime of either the central government or local authorities. Although historically widespread, evidence of acorn bread consumption was confined for the most part to those groups living or nomadizing within the oak-pistachio belt. The use of acorns as animal fodder in winter (Olivier 1800: 66; Salehi et al. 2010: 190) and for tanning will not be considered in any depth here.

Ancient and mediaeval sources

Strabo (64/3 BC – 24 AD) noted that Persian youths were trained, among other things, 'to live outdoors all night and eat wild fruits, such as pistachio nuts, acorns, and wild pears' (*Geog*. 15.3.18). Writing c. 60–30 BC, Diodorus Siculus preserved an important detail of subsistence ethnography in his discussion of the ancient Kossaeans of the Elamite region in south-

western Iran, whom Strabo described as 'mountainous and predatory tribes' (*Geog*. 16.1.17). The Kossaeans, wrote Diodorus, lived in the 'depressions and deep valleys' of the Zagros (Diodorus 5.44.7). 'These men, who have been independent from ancient times, live in caves, eating acorns and mushrooms, and also the smoked flesh of wild beasts' (Diodorus 19.19.3).

After leaving Šuštar for Izeh/Malamir in 1327, Ibn Battuta mentioned oaks, from the acorns of which the inhabitants of the region made bread (Defrémery and Sanguinetti 1877: 32).

Early modern sources

In 1606, while *en route* from Bandar Abbas to Baghdad via Lar, Shiraz, Ram Hormuz and Ahwaz, the Portuguese traveller Nicolau de Orta Rebelo witnessed a 'Beduin' (presumably an Iranian nomad) father who threw acorns down from an oak tree as food for his starving children (Serrão 1972: 130-131). While staying at Aslan Chesmesi in northwestern Iran on 30 January, 1686, William Hedges observed, 'Here I saw bread made of Acorns and Barley (Barlow and Yule 1887: 216).

Nineteenth century sources

In 19th century Iran acorn consumption was often the result of food scarcity. When J.M. Kinneir travelled between Shiraz and Behbehan in 1809 he found the remnants of a tribe (unnamed) that had been nearly exterminated by a Qajar prince, 'and the few that survived had taken refuge on the summits of the loftier and most inaccessible mountains, where they subsisted on a wretched kind of bread made from acorns' (Kinneir 1813: 55; cf. MacGregor 1871: 144). When J.E. Alexander passed through the Dasht-e Arjan in 1826 he noted that, 'Acorn bread is occasionally eaten by the villagers in this district' (Alexander 1827: 122). A satirical Bakhtiyari poem thought to refer to Fath 'Ali Shah (1769-1834) vowed, 'I and my mother's brothers…/Who have fed on acorn-bread, and are savage and fearless…/We shall hold up the road from Shiraz, all of one heart and one secret purpose' (Lorimer 1955: 109).

In 1840 A.H. Layard encountered some nomads near Malamir who 'seemed…to be very poor, and were destitute of almost everything, eating bread made of acorns' (Layard 1894: 181). Layard also camped with some Bakhtiyari who 'were so poor that they could only offer us bread

made of acorns, which I found very unpalatable, but which seemed to be their usual food' (Layard 1894: 338). A year later, in 1841, while travelling between Behbehan and Kazerun, Baron C.A. de Bode encountered the messenger of a Bakhtiyari chief whose 'only provision for the journey was a bag filled with the moist flour or raw paste of the acorn…In the Bakhtiyárí mountains it forms the principal food of the wandering tribes. Their women gather the acorns as they drop ripe from the trees, and bruise them between two stones in order to extract the bitter juice, they then wash and dry the flour in the sun, and this is the whole process. They bake the cakes of it or eat the paste raw, and find it very palatable and nutritious' (de Bode 1843: 97-98). After his visit to Iran in 1850, Binning gave a fairly detailed description of acorn consumption in the Dasht-e Burr, noting, 'I saw a number of people gathering acorns, which they use in making bread. The acorns are dried in the sun, peeled, and pounded into flour. This flour is soaked in water for two or three days, to take off the bitter astringent taste: then mixed with an equal quantity of barley meal, and baked in thin cakes. They gave me a piece of this bread, which I did not much relish' (Binning 1857: 196-197). Major R.M. Smith, R.E., who travelled from Kerman to Bandar Abbas in 1866, made similar observations, noting, 'Throughout the mountains in the south of Persia, which are generally covered with dwarf oak, the people are in the habit of making bread of the acorns, or of the acorns mixed with wheat or barley. It is dark in colour, and very hard, bitter, and unpalatable' (Yule 1871: 115). The Spanish traveller Adolfo Rivadeneyra reported that, in order to leach acorns, 'The acorn is peeled and put in an oven; when very hot it is steeped in water for 20 days, when the water becomes black and bitter. The acorn is then dried in the sun, and when quite dry is pounded and made into cakes' (Rivadeneyra 1880: 208; MacGregor 1887: 311). In 1885 M. Bell noted that, 'The inhabitants of SW Persia are frugal eaters. The food of the poor consists of "nan", i.e. a leavened cake of wheaten, barley, acorn, or other flour baked in an oven and mast or curdled milk. Buttermilk forms their chief drink' (quoted in Bradburd 1996: 14). Houtum Schindler reported that the inhabitants of Ali Gizāin, between Dezful and Khoramabad, 'subsist much on cakes made of pounded acorns' (MacGregor 1887: 171). According to the *Farsnameh-ye Nasiri*, composed in 1895/6, the Bahma'i sub-tribe of the Liravi-Kuh tribe, one of the Lur tribes of Fars which wintered around Ram Hormuz, 'subsist on chestnuts, acorns, roots, almonds, and game' (Lane 1923: 221).

While travelling to Bushehr from Shiraz in 1889, H. de Windt noted that 'some children were gathering and collecting acorns, which are here eaten in the form of a kind of bread by the peasantry' (de Windt 1891: 202). Visiting Luristan in 1899, Lady E.R. Durand wrote, 'At one place we came upon a man eating some acorn bread, and my husband [Sir Mortimer Durand, British Minister in Persia] ate some. He said it "wasn't bad — tasted of nothing in particular." I did not try. It looked very nasty, I thought. But the acorns are not bitter like our English acorns. They are large and comparatively sweet, and are soaked for a long time before the bread or cake is made' (Durand 1902: 217). A less flattering impression was given by her husband, who found the Lurs 'extremely poor, living mostly on acorns gathered in their great oak forests' (Sykes 1926: 250).

The 20th century

While in Tehran in 1909 D. Fraser noted, 'The Bakhtiaris deeply appreciated the amenities of town life, as well might men whose daily sustenance at home frequently consisted of bread made from acorns' (Fraser 1910: 199). Similarly, a year later Victor Bérard wrote that the Issavand (Hassanwand) Lurs consumed bread made from 'sweet acorns' (Bérard 1910: 120; Black-Michaud 1974: 214). Between 1902 and 1912 the Rev. W.A. Wigram was active amongst the Assyrian Christians and later described 'bread made of acorn meal', noting that, while it 'sounds somewhat unpalatable', it 'was in fact not at all bad eating. The…oaks which grow in Kurdistan bear very large acorns almost as big as small walnuts; and these are not nearly so bitter as English acorns but rather like chestnuts in taste. Often they are roasted and eaten as we eat chestnuts in England; but generally they are ground to meal for bread-making, and mixed with an equal proportion of barley meal' (Wigram and Wigram 1922: 155).

In 1914 D.R.L. Lorimer collected Bakhtiyari poetry in the Karun River drainage area which confirmed the importance of acorns in Bakhtiyari society. 'Here water is abundant and sweet', he wrote, 'and the evergreen oak flourishes, the famous *balūt*, whose large acorns provide a bread substitute in times of scarcity' (Lorimer 1954: 543). He also noted that the Bakhtiyari sowed some crops in their winter pastures 'before the tribes set out on their downward journey to the *garmsīr*. These are harvested on their return in the following year. So important is this grain supply that its failure is dreaded as spelling famine. If in addition the acorn crop fails, starvation is in sight' (Lorimer 1954: 544).

One particularly interesting piece of evidence collected by Lorimer is a Bakhtiyari poem entitled 'The song of the acorn'. Lorimer noted, however, that 'despite the poet, no one in my experience professes to like this kind of emergency food' (Lorimer 1955: 110). In Lorimer's translation the poem runs as follows:

May my oak tree bear fruit and my she-goat bring forth young!
When my ground acorns and buttermilk come together, thanks are due to God.
Ripe acorn, O acorn! Dried acorns ground down:
He who has and eats not, may his house perish!
The ripe acorn pushed his head out of the acorn-cup:
Every Lur came at him with a long stick.
A buttermilk-drinking, drunken Lur
Struck me on the head; the cap fell off my head,
He threw me into a bag,
(And) carried me off to the top of the gorge.
He brought down on my head a murderous knife:
He ripped open my belly, and tore out my tender body.

Many parts of Iran suffered famine during World War I. While serving in Iran from 1916 to 1918, G.S.F. Napier noted that 'the famine conditions owing to the war have been very severe, and bread made from acorns of the scrub oak was the principal food of the villagers' in Luristan (Napier 1919: 13). Approaching Kerend-e Gharb in 1918, Maj.-Gen. L.C. Dunsterville noted, 'The hills as far as Karind are covered with a dwarf deciduous oak, which furnishes both firewood and food for the inhabitants of the few villages. The acorns are very large and form a valuable food in times of famine' (Dunsterville 1921: 156). Similarly, W.R. Hay, who spent the years 1918-1920 in Kurdistan, noted that, 'in the remote mountain districts acorns become a staple food. These are ground into a flour from which an exceedingly bitter black bread is baked' (Hay 1921: 56). A.T. Wilson, another observer in Luristan just prior to and during World War I, wrote, 'the acorns are ground with a boulder on a great slab of rock and the flour or rather fibre left to soak in running water for two days or so to get the poison out of it. Then it is used like barley flour, or mixed with it' (Wilson 1941: 65). On acorn bread Wilson also wrote, 'It is not appetizing, but it keeps well, and judging from the physical condition of whole families which have lived with no other cereals and no other food except the

produce of their herds, it does not lack vitamins' (Wilson 1932: 55). According to Norden, who visited them in the 1920s, the 'Babui, a section of the Boyr Ahmad, have not the space, nor perhaps the soil, for barley and other grains. Their bread is made from acorns ground into meal, and they use acorns, too, in tanning their leather' (Norden 1928: 98).

The ill-effects of acorn consumption were also observed. 'Apart from the scarcity of food', wrote V. Minorsky, 'the Lurs suffer constantly from indigestion, because of their use of flour made from wild acorns' (Minorsky 1945: 78). Similarly, while she was with some Lurs in the Pusht-e Kuh in 1932, F. Stark observed, 'When their store of flour is finished, they live on acorns soaked for three days to take away their bitterness, and kneaded into bread: only in good years are they saved from this diet which, they say, is fatal to many of the children' (Stark 1933: 251). A year later, while in Kuh Giluyeh, the British geologist J.V. Harrison observed that, 'In late October a large part of the population was found high up on the mountain side… harvesting the acorn crop. The area of arable land, in much of this part of Iran, is insufficient to provide wheat or barley enough to feed the population, which, sparse as it is, relies in varying proportions upon the acorn harvest for its means of life' (Harrison 1936: 26). Although Harrison specified the month (October) in which acorn gathering occurred in Kuh Giluyeh, none of the sources cited referred to inter-annual variability in acorn availability. Salehi et al., however, noted that, on the basis of recent surveys, 'Based on information from respondents, oaks have a good production of acorns every two years' (Salehi et al. 2010: 188). During his ethnographic work among the Papi in Luristan in 1935, the Danish ethnographer C.G. Feilberg recorded a detailed account of the gathering of acorns, the leaching process and bread-making (Feilberg 1952: 161-162).

In 1936 the Austrian botanist Gauba observed that bread made from acorn flour was a staple among the Lur tribes during years of famine or failed harvest (Gauba 1949-50: 21, 'Die Eichenwälder bieten ihnen einen reich gedeckten Tisch, von dem in Jahren der Dürre und Mißernten auch die Luren profitieren, wenn Brot aus Eichelmehl ihre herbe Kost wird'). During World War II the physician Dr. O. Garrod noted some of the physiological effects of over-consumption of acorns. In Fars, he wrote, 'The oaks provide acorns about two inches long. These are gathered by the poorer nomads, who pulverize them with stones, wash them for about a week in running water to remove the bitterness, and then use them as flour. Much of their bread contains 50 per cent or more of this acorn flour mixed

with that obtained from barley or wheat. It is said to be nouishing. I have tasted it on and off. If well washed its flavour is not unpleasant and reminds one of bran or all-bran. If eaten for any length of time it is, unlike its counterpart, highly constipating and leads to indigestion' (Garrod 1946: 35).

In 1959-60 Patty Jo Watson found that the villagers with whom she was working in the Kermanshah region no longer ate acorn bread, although they had in the past (Watson 1979: 70). When doing fieldwork amongst the Boyr Ahmad, between June 1968 and January 1970, however, G.R. Fazel determined that 'the bulk of carbohydrates in the nomads' diet was…derived from the acorns which women collected during the summer months and converted into a kind of bread following a complicated process of leaching to extract the tannic acid. Though it occupies a less important place in the economy today, the gathering and processing of acorns still takes up a portion of women's time' (Fazel 1977: 81). The notion that, by the 1970s, acorn consumption was less important than it had been previously was confirmed by the Lur workmen employed by Frank Hole during his excavations at Tepe Tula'i (northern Khuzestan) in 1973. At this time Hole was told that 'formerly they ate little grain, obtaining most of their flour from acorns which were harvested in the mountains and stored for use during the year' (Hole 1974: 227). In that same year, while travelling with the Baharvand Lurs, Hole was similarly told that, 'in the past they had…collected acorns as a staple food. The women confirmed this and they showed me acorn roasting ovens and grinding mills…and gave me recipes for cooking acorn meal' (Hole 2009: 263). Finally, in her ethnographic study of nomads in Luristan, Inge Demant Mortensen noted some important details regarding acorn use, including the names for bread made of pure acorn (*kazqa*) and mixed acorn-wheat flour (*kalq*). In addition, she published several important photographs of acorn crushing stones, acorns in the act of being crushed, and a type of knife (*ranj*) used to open acorns (Mortensen 1993: 213, Figs. 6.176-177, 191).

Conclusions

Many of the sources cited above tell broadly the same story. Acorns were often consumed by nomadic groups, particularly Lurs and Bakhtiyari, who were reduced to eating acorn bread in the absence of cereal grains. However, as D.A. Bradburd noted, 'While some of these observers adduce consumption of acorn bread to be a sign of abject poverty, others seem to

suggest that it was consumed because, given limited means of transportation, other grains were unavailable. In any case, whether from poverty, inadequate supply of other grains, or any other reason, it is clear that many pastoralists reduced their households' consumption costs by gathering acorns rather than purchasing wheat or barley' (Bradburd 1996: 15). More importantly, as Loeffler noted in discussing the economy of the Boyr Ahmad under Qajar rule, the consumption of acorns allowed the nomads to circumvent the gross exploitation to which they were libable to be subjected by tax-collectors. As he observed, 'Little land was tilled, herds held were small, no improvements were made. The natural environment offered an almost perfect solution: a diet based on acorns. The acorns needed only to be collected in the vast oak forests covering the area, and to be processed into bread. The kadkhoda would extract nothing of it. Neither could he sell the acorns — that had almost no market value — nor would his household use much of it since wheat bread was eaten there' (Loeffler 1978: 156).

These examples demonstrate that the historical literature on Iran is a rich source for the study of balanophagy. In time, it is to be hoped that the archaeological evidence of ancient balanophagy will become more abundant as excavation and recovery techniques are refined.

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KAL KHARABE: A RECENTLY DISCOVERED FORTRESS AND ROCK-CUT CHAMBER IN THE ORUMIYEH BASIN, IRAN

BY

Behrouz Khan MOHAMMADI[1], Keomars Haji MOHAMMADI[2]
& Roberto DAN[3]
([1] University of Tehran; [2] Azad University of Abhar ;
[3] ISMEO - International Association of Mediterranean and Oriental Studies)

Abstract: This paper describes a recently discovered fortress and rock-cut chamber in the western Lake Orumiyeh basin, in Western Azerbaijan. The fortress shows walls and rock-cut steps similar to the remnants of other Urartian fortresses in the region, but a more precise date is impossible due to the absence of diagnostic pottery. The rock-cut tomb of Kal Kharabe has unique features, like the presence of three separate axially-aligned chambers, the high-quality stone working, and the existence of well-shaped niches and multiple recesses on the doors. These features allow us to date this rock-cut chamber with certainty to Urartian times.

Keywords: Urartu, rock-cut features, rock-cut grave, fortress, Middle Iron Age, Sero Pass, Lake Orumiyeh.

Introduction and Geographical Location

This paper describes a recently discovered fortress and rock-cut chamber in the western Lake Orumiyeh basin, in Western Azerbaijan[4]. The location of this archaeological site is locally known as Kal Kharabe or Qal'eh

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[1] Senior archaeology specialist, Administration of Cultural Heritage, Handicrafts and Tourism of West Azerbaijan Province, Iran; bazargan22@gmail.com.

[2] MA in archaeology; qumars.hajimohamadi@gmail.com.

[3] ISMEO – International Association of Mediterranean and Oriental Studies; roberto_dan@hotmail.it.

[4] The contents of this article are the work of all authors. Specifically, Behrouz Khan Mohammadi and Keomars Haji Mohammadi wrote "The Fortress" and "The Rock-Cut Chambered Tomb", while Roberto Dan wrote "The Qal'eh Kharabe Tomb compared to Urartian Rock-Cut Chambers" and "Some Remarks on the Iron III/Urartian Sites in the Sero Area". The "Introduction and Geographical Location" section was written jointly. Behrouz Khan Mohammadi and Keomars Haji Mohammadi are responsible for the illustrations except where otherwise indicated.

Kharabe[5], literally, the "destroyed fortress"; it is situated in the Sumay-ye Beradust district of Orumiyeh province (Pl. 1).

The group of structures is located on a rock outcrop 1.35 km south-west of Firuzian village, about 50 km north-west of the city of Orumiyeh. This is circa 3 km north-west of the Turkish border and about 10 km north of the town of Sero and a mountain pass that has been one of the main frontier posts between Iran and Turkey since ancient times.

The site can be considered as part of the basin of the River Zariq Čay (or Zarin Čay), a tributary of the Nazlu Čay. This area is semi-arid, with a moderate water deficit (Dewan & Famouri 1968: figs. 84-85); the annual precipitation is 30-50 cm (Dewan & Famouri 1964: Appendix B5). It is characterized by rough, mountainous land, typical of the Zagros range, with calcareous lithosols — brown and chestnut soils. Most of this territory is unsuited for agriculture, but is used for grazing sheep and cattle (Dewan & Famouri 1964: 193, Map D11, Appendix B3).

The Fortress

The rock outcrop where the archaeological remains were found stands above, and is therefore clearly strategic with respect to, the surrounding area (Pl. 2-3). The outcrop measures 111 metres east-west by 90 metres north-south. On the top and slopes of the spur, remnants of cyclopean walls are immediately clearly visible. Due to the steepness of the slopes, access to the fortress ruins is difficult, especially on the northern, western and eastern sides. The southern side is easier to climb and the ancient entrance to the fortress was on this site, as confirmed by the presence of walls that were probably part of the main gate (Pl. 4). As mentioned, a number of ruined standing walls are still visible on the top of the hill. These walls were built without mortar, using large, roughly squared stones. The best-preserved walls have five courses of stones, with an elevation of more than two metres (Pl. 5-6). In many parts of the site, tracts of wall-foundation steps cut into the rock are evident. The remains of walls are also to be seen on the south-western side of the rock outcrop (Pl. 8).

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[5] Geographical coordinates: 37°47'51.25"N 44°35'14.14"E. Altitude: 2080 metres above sea level.

These walls and rock-cut steps show marked similarities to the remnants of Qal'eh Ismail Aqa, Kuh-e Zambil, Kazem Dashi and many other Urartian fortresses, not only in Iranian Azerbaijan, but also around Lake Van and in the Ararat valley. However, it is impossible to give a more precise date starting from the architecture, unless there are specific characteristics like the presence, e.g., of metal clamps. So, a post-Urartian, Achaemenid or Parthian-Hellenistic date for these fortifications cannot be excluded. Some scattered potsherds, unfortunately not diagnostic, were collected from the surface of the site.

The Rock-Cut Chambered Tomb

Undoubtedly the most interesting feature of the site is a large chambered tomb cut into the bedrock of this small mount. This rock-cut tomb is located on the eastern side of the outcrop and is accessible only from the western side with some difficulty (Pl. 2). The tomb is oriented north-south, with an entrance on the south side, and consists of a series of three rooms in line on the central axis. Beyond the entrance, there is a first antechamber to the south, than a second central room followed by, at the northernmost end, the main chamber (Pls. 9-10).

The southern room was the main entrance to the grave, completely carved in the rock and left opened, like the *dromos* present in the rock-cut graves of Qal'eh Ismail Aqa[6]. It measures 2.20 × 1.70 m. Access to the room was provided by six rock-cut steps, still partly preserved and each about 0.90 m wide (Pl. 7). These steps are attached to the south wall of the *dromos* and are partly covered by debris; only four steps are currently visible[7]. Some rock-cut features are also to be seen on the western rock wall bordering this feature: a rectangular niche and some more rock-cut steps. In particular, the rectangular alcove, that measures 0.75 × 0.60 m with a depth of 0.40 m, looks like a recess made to hold an unfinished — or now completely destroyed — inscription (Pl. 11).

A brief passage partially obstructed by debris, 1.07 m long and 1.25 m high, led to the central room (Pl. 12). This passage has an initial width of 0.98 m, but after 0.55 m narrows to a width of 0.62 m. This reduction

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[6] For these rock-cut chambers, see Silenzi 1984: 217-218, figs. 46-47.

[7] Stairs leading to a rock-cut grave are attested e.g. in Verahram (Kleiss 1974: 87-88, abb. 7, Taf. 3.1).

resembles the form of a classical Urartian recess, although the distance between the external frame and the inner one is bigger than usual. The dimensions of the central chamber are 4.20 × 2.30 metres, with a height of 2 m (Pl. 13).

The longer sides to the east and west are characterized by the presence of six rectangular niches for funerary urns, three on each side facing each other (Pl. 14). These were carved almost symmetrically at an estimated height of about 1 metre from the floor (that is covered by rock debris). These niches have an average depth between 0.36 and 0.45 m, width between 0.45 and 0.71 m and height between 0.50 and 0.70 m. The roof of the room is completely absent, although there are recessed features carved into the rock in correspondence to where it perhaps was (Pls. 15-16). Originally, the roof was probably covered with big flat stones and has completely collapsed. Just over the putative original roof, there are traces of another room carved in the stone, of which traces of the well-worked north and west walls survive. In the northern wall, a large niche is still visible, just above the doorway leading to the northern, main chamber of the grave (Pl. 17). This recess might be interpreted as a connection to a further funerary chamber that was left unfinished. It measures 1.30 × 0.60 m, with a depth of 0.55 m. The floor between these two levels has now completely collapsed. Immediately on the left side of the passage leading to the northern chamber there is a low bench (or step) carved in the rock, with a height of 0.20 m (Pl. 14).

As discussed above, in the northern wall of the central room there is a multiple-recessed doorway that leads to the main northern room (Pls. 17-18). The passage is very short, with a length of 0.51 m, while the external frame is about 1.10 m high and 0.63 m wide. The recess measures 0.16 m deep and 0.11 m wide, and the inner frame 0.65 m high and 0.41 m wide.

The main chamber is rectangular shape, with dimension of 2.50 × 1.90 m by about 2 m in height (Pl. 17). The roof is flat. A large alcove is located on the northern wall (Pl. 19), measuring 1.07 × 0.90 m, depth 0.75 m. The total length of the rock-cut grave is 11.27 m, and the total surface area 18.15 m^2.

The Qal‘eh Kharabe Tomb compared to Urartian Rock-Cut Chambers

The rock-cut tomb of Kal Kharabe has unique features. To better understand the possible chronology of this structure we need to discuss the current state of the research on rock-cut chambers in Iran. Until a few years

ago, all the rock-cut structures discovered in eastern Anatolia, Iranian Azerbaijan and Armenia were considered as products of Urartian workmanship. In Iran, for example, the date of rock-cut structures is quite uncertain; up to 1971 it was believed that rock-cut steps, and indeed all rock-cut structures of that type — at least in Iranian Azerbaijan — were the work of Urartians. The discovery of the site of Shahtepe in 1974, currently known as Islamtepe, which has abundant rock-cut features that are of uncertain date, has contributed to calling into question this notion (Kleiss 1974: 103-106). The fact is that a rock-cut structure may be dated with certainty only in very few specific cases, thanks to the presence of associated materials with specific attributes. Rock-cut chambers are generally considered one of the most characteristic elements for the identification of an Urartian site; the most notable examples are located in the capital of the Kingdom of Urartu, Van Kalesi (Sevin 2012: 11-96). Tombs with multiple rooms have frequently an antechamber and are generally easily accessible, whereas the single-chamber tombs are often located in places that are difficult to reach. The multiple-chamber tombs usually have a larger main room, which opens into smaller rooms. Both types appear designed to accommodate inhumation and cremation burials, often simultaneously, as evidenced by niches for urns and cuts in the floor for sarcophagi. Seventy-six of such Urartian sites are known to date, sixty-one of which are single-chamber tombs and nineteen multiple-chamber tombs. Only four of these sites possess both types of tombs: Van Kalesi, Hasanova, Atabindi and Kaleköy (Dan 2015: 35-36). It is generally believed that the multiple-chamber tombs were typical of Urartian culture and might contain the remains of the kings and their families in the capital and the governors of Urartian administrative centres elsewhere in the kingdom. Köroğlu has recently advocated the dating of rock tombs with a single chamber to post-Urartian times (Achaemenid or Roman; Köroğlu 2007: 450; 2008: 35-36), mainly on the basis of their differences with respect to the multiple-chamber tombs preserved in Van Kalesi and other locations[8]. In truth, these graves have all been discovered looted, and the only certain criteria for dating them are the presence of cuneiform inscriptions near the entrance or other specific features, like the presence of multiple recesses, that are

[8] Reference is made to the tombs known as Naft Kuyu, İçkale, Great Ḫorḫor and Ostkammer on the Rock of Van, and to the graves of Kayalıdere, Atabindi I, Palu, Kaleköy and Şirinlikale. On these in general, see Çevik 2000.

typical Urartian features in those territories[9]. These inscriptions have been identified only in Great Ḫorḫor on the Rock of Van, where the annals of Argišti I are carved (CTU A 8-3; Salvini 2008: 332-345), and in Mazgirt/Kaleköy, near Elâzığ, where an inscription of Rusa II is present (CTU A 12-6; Salvini 2008: 577-578).

The presence of three separate axially-aligned chambers, the high-quality stone working, and the existence of well-shaped niches and multiple recesses on the doors allow us to date this rock-cut chamber with certainty to Urartian times. The unique and excellent workmanship can be compared to the rock-cut chambers of Van Kalesi/Ṭušpa, the capital of Urartu, for example the so-called Ḫorḫor grave, the royal mausoleum of Argišti I. The chamber of Kal Kharabe must be added to the list of such structures currently known in Iranian Azerbaijan (Pl. 20): Alişar, Farhad Zaqasi, Gojer Qal'eh, Karniarouk, Pirçavuš, Qal'eh Hodar, Qal'eh Ismail Aqa, Sangar, Sharik, Shahtepe, Verachram and Zingir Qal'eh (some considered to be undoubtedly Urartian, others of more uncertain date).

Some Remarks on the Iron III / Urartian Sites in the Sero Area

The area where this recently discovered site is located is of a certain importance, because the fortress stands on one of the main routes across the Zagros Mountains. The road from the Sero Pass leads to Yüksekova, Hakkâri and the high part of the Great Zab River (Pecorella - Salvini 1982: 17), crossing an area where Ḫubuškia is generally believed to have been located (Salvini 1999: 134)[10].

The absence of any kind of epigraphical information prevents the construction of a precise chronological framework for the Urartian occupation of this area. However, it seems highly probable that it was conquered at the beginning of Urartian expansion in the Orumiyeh basin during the reigns of Išpuini and Minua (about 820-810 BC). The Urartian presence close to

[9] See for example the rock-cut chamber of Yelpin in the Vayots Dzor region in Armenia that has a single chamber and multiple recesses on the entrance.

[10] Concerning the location of Ḫubuškia, a small Iron Age kingdom referred to as the city of Na'iri in the text of Sargon II, two main proposals have been advanced: the first locates it to the north/north-west of the Muṣaṣir kingdom; the other places Ḫubuškia east of Muṣaṣir. On the presence of Ḫubuškia in Neo-Assyrian texts and on the diverse hypotheses regarding its geographical location, see Maniori 2010: 183-186 and Maniori 2014: 189-191.

the Sero Pass was certainly reinforced during the reign of Rusa I (about 730-713 BC), at the time of the clashes with Assyria in the Zagros area, which culminated in the 8th campaign of Sargon II in 714 BC (Salvini 1984: 35-51).

In the Sero plain, an area of 4700 hectares surrounded by impressive rock massifs, three archaeological sites with Iron III material (about 800-500 BC) have been identified (Pl. 1): Tappeh Gengačin (Site 98), Tappeh Hergivan (or Tappeh Hengervan; Site 99) and Tappeh Rabat (Site 97).[11] The most important of these because of its size is Tappeh Rabat, strategically located in the southern extremity of the plain, approximately halfway between the Sero Pass and the beginning of the narrow Zariq Čay valley, on the road that leads towards the Orumiyeh plain to the west and the Movana area to the south. The importance of the site is demonstrated by its long occupation in pre-Urartian and post-Urartian times[12]. Furthermore, it is the only Iron III site in the area where a fragment of Bia pottery, the classic Urartian red burnished pottery, has been discovered, a circumstance that testifies to the importance of the site in this zone.

In Tappeh Gengačin and Tappeh Hergivan, fragments of buff-greenish, yellowish or brown pottery, typical of the Iron III in the region, have been discovered (Belgiorno et al. 1984: 169-170, 212-213, fig. 39), which confirms the continuity of use of the sites during the Urartian occupation of the area.

Of great importance was the fortress of Mirdaud (Pl. 1), dated to Urartian times only on the basis of its architectural features (Belgiorno et al. 1984: 170; Pecorella 1985: 29). This site was strategically located on a rock outcrop on the Nazlu Čay at the crossing of two roads (Belgiorno et al. 1984: 170), one leading to Sero and the other to Movana.

So this was a control point on the road to the Zagros, and also on that to the fortress of Qal'eh Ismail Aqa and the Orumiyeh plain (Pl. 1).

From a consideration of these sites, it appears evident that the Urartians adapted the settlement system already present from the Iron II and the beginning of Iron III. They maintained intact the local culture, as demonstrated by the continuity of the local pottery, almost without having to

[11] The chronology of Tappeh Hergivan has been questioned by Stephan Kroll, who dates the sherds discovered there to the Chalcolitic and Early Iron Age (Kroll 1994).

[12] The surface pottery discovered here dates to the Early Bronze Age, the Early and Middle Iron Age and to Islamic times (Belgiorno et al. 1984: 169, 212-213, fig. 39).

resort to the construction of new sites. Their presence here was probably connected mainly with the control of the roads and the Sero Pass, since agricultural exploitation would have been a secondary concern, given the nature of the land, which was much more suited to grazing, as described above.

It seems a likely hypothesis that this group of sites was part of a system under the control of the large fortress at Qal'eh Ismail Aqa, one of the main Urartian centres in the entire Orumiyeh basin[13].

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[13] The fortress of Qal'eh Ismail Aqa, with its 1950 metres of fortified perimeter, is considered second in dimensions only to Bastam, the primary centre of the Urartian control of Iranian Azerbaijan during the 7th century. Qal'eh Ismail Aqa was the most important fortress in Iran from the end of the 9th century until the time of Rusa II, when Bastam was built, and the main Urartian settlement on the west side of the Orumiyeh basin (Biscione 2012: 78-79, 86, fig. 05.1).

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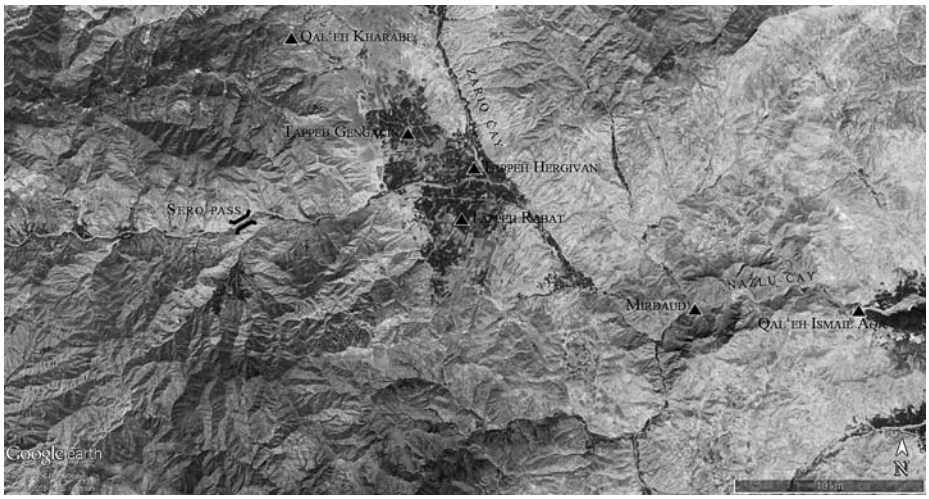


Pl. 1. Iron III/Urartian archaeological sites in the Sero area, in Western Iranian Azerbaijan (adapted from Dan 2012: fig. IV.49.1).

Pl. 2. Detail of the site of Kal Kharabe, showing the positions of the wall remains and the rock-cut chamber.

Pl. 3. Kal Kharabe. General view of the rock outcrop seen from north.

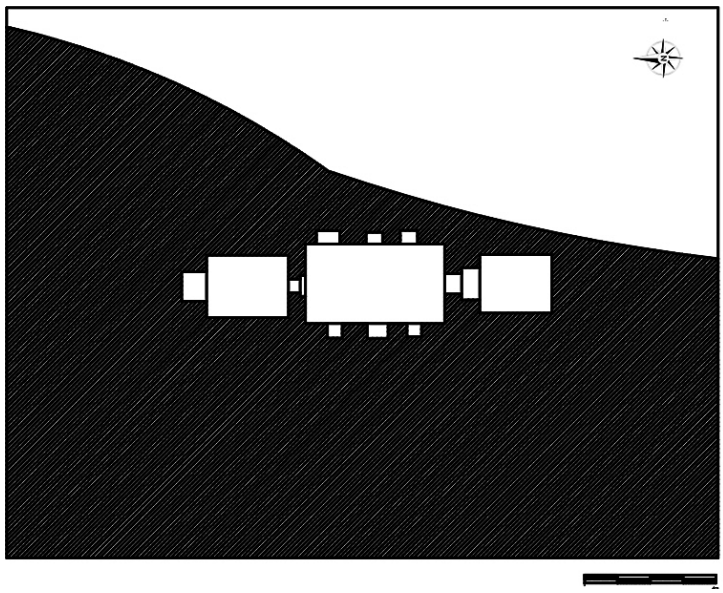
Pl. 4. Kal Kharabe. General view of the rock outcrop seen from east; on the left side traces of walls are clearly visible, and on the right side is located the rock-cut chamber.

Pl. 5. Kal Kharabe. A closer view of the cyclopean walls on the southern side of the rock outcrop.

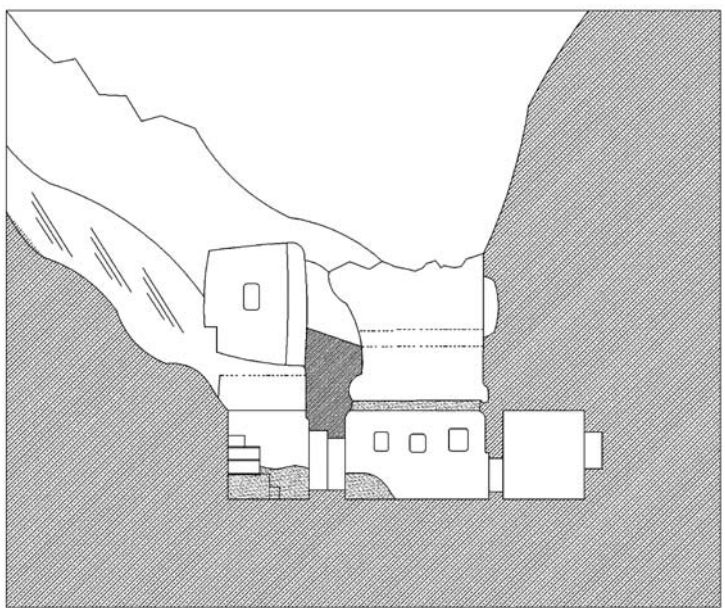
Pl. 6. Kal Kharabe. Another view of the cyclopean walls on the southern side of the rock outcrop.

Pl. 7. Kal Kharabe. Detail of the rock-cut steps.

Pl. 8. Kal Kharabe. Remains of walls on the south-western part of the rock outcrop.



Pl. 9. Kal Kharabe. Plan of the rock-cut chamber
(drawn by B. Khan Mohammadi and K. Haji Mohammadi).



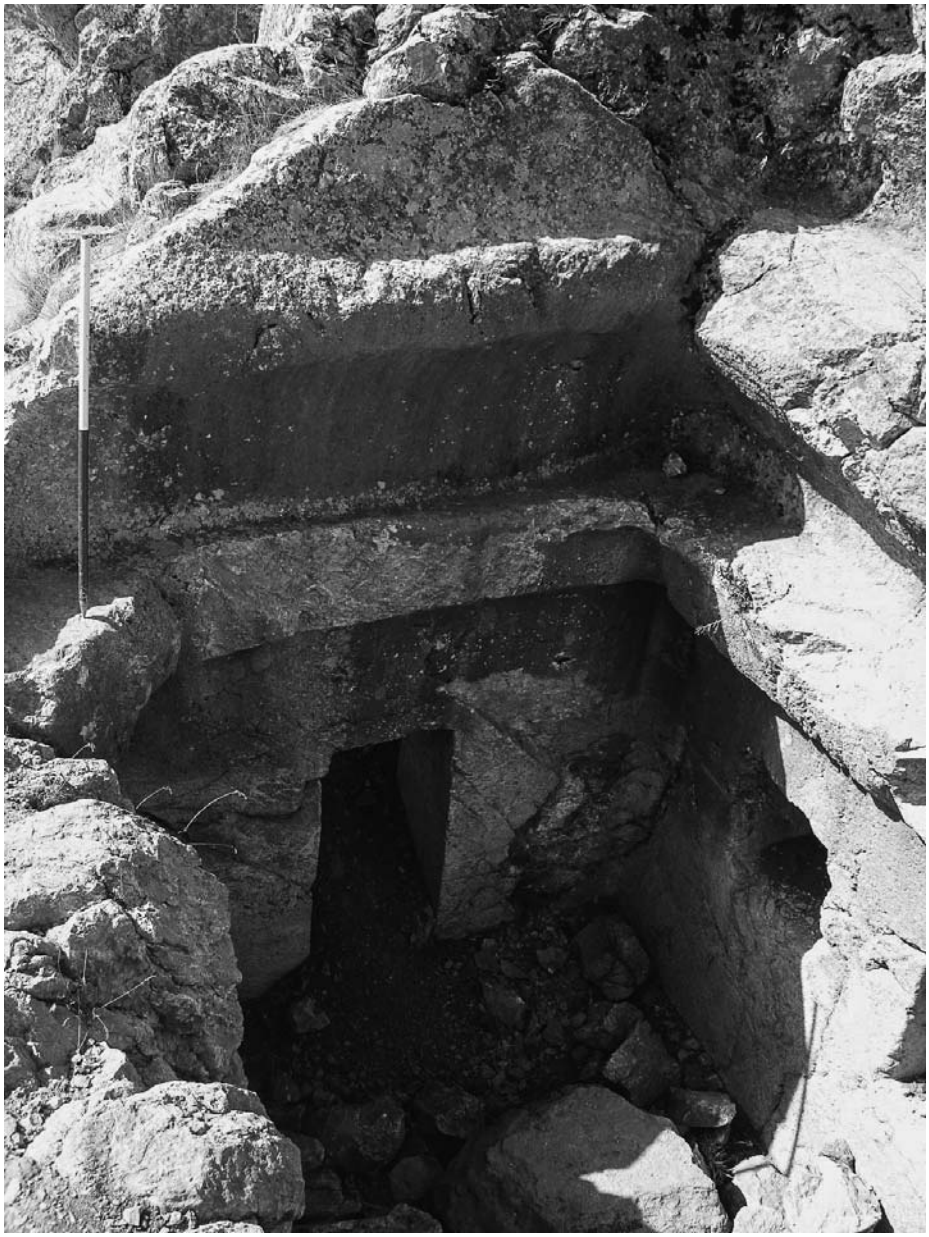
Pl. 10. Kal Kharabe. Section of the rock-cut chamber
(drawn by B. Khan Mohammadi and K. Haji Mohammadi).

Pl. 11. Kal Kharabe. The niche above the southern room/dromos of the tomb.

Pl. 12. Kal Kharabe. The door between the southern chamber/dromos and the central room.

Pl. 13. Kal Kharabe. General view of the central room, in which are visible the door to the northern main room and the alcove just above it.

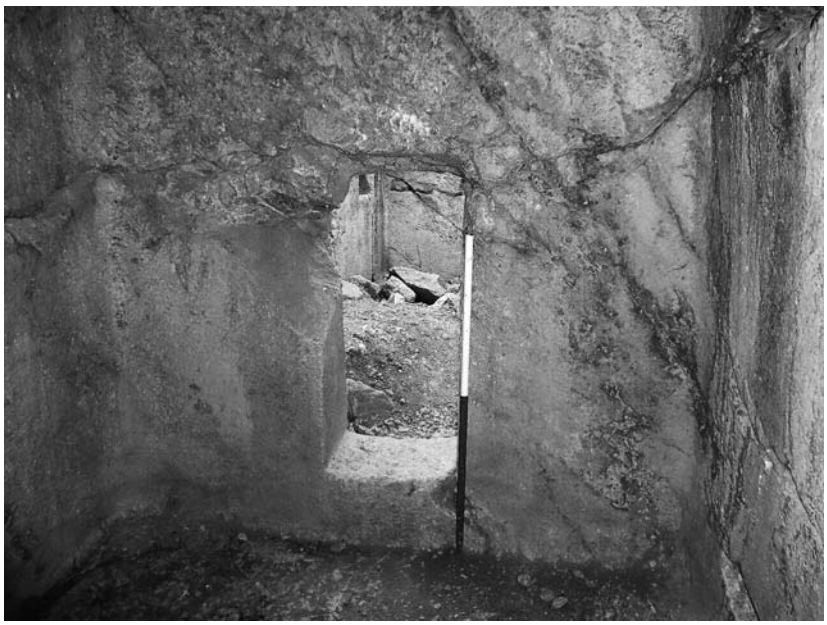
Pl. 14. Kal Kharabe. View of the three niches on the western side of the central room, with the rock-cut bench on the northern wall.



Pl. 15. Kal Kharabe. General view of the southern part of the central room in which are visible the door between southern room/dromos and central room and the recesses for the collapsed roof.

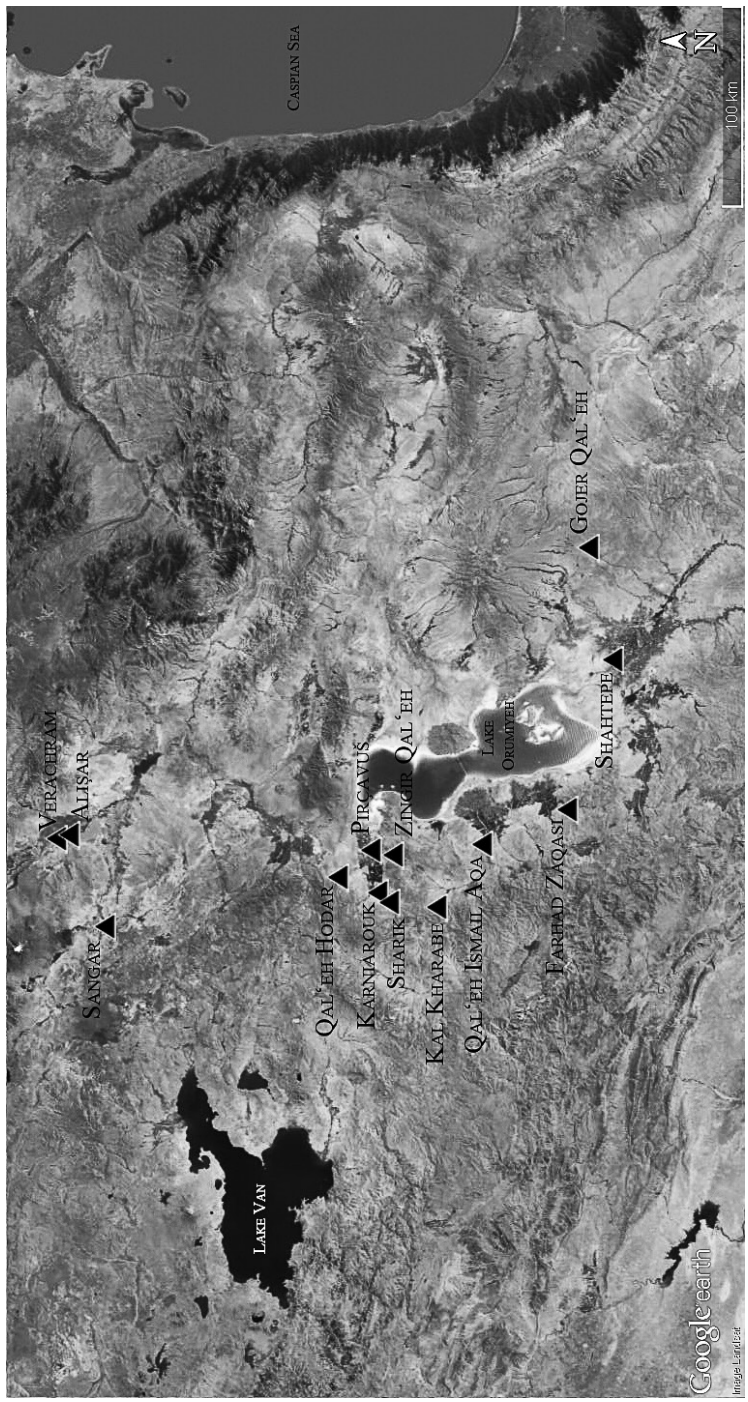
Pl. 16. Kal Kharabe. Internal view of the southern side of the central room with door to the southern room/dromos, wide rock-cut slots for the collapsed roof and niches.

Pl. 17. Kal Kharabe. General view of the northern wall of the central room, with the door to the northern main room and niche just above.



Pl. 18. Kal Kharabe. Inner view of the southern wall with door of the northern main chamber.

Pl. 19. Kal Kharabe. View of the northern wall of the main room with niche.



Pl. 20. The distribution of Iron Age rock-cut chambers in Western Iranian Azerbaijan (drawn by R. Dan).

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"LES FAITS SUR LE TERRAIN": THE SUSA I CEMETERY, THE "MASSIF FUNÉRAIRE", AND SECOND-DEGREE BURIALS

BY

Javier ÁLVAREZ-MON
(Macquarie University)

Abstract: This article seeks to reintroduce the reader to the reported archaeological evidence for the Susa I cemetery (ca. 4000 BCE), incorporating into the discussion information from the *Roland de Mecquenem Archives de Suse (1912-1939)* published online in 2011 by Noëmi Daucé. A re-examination of the cemetery and related *massif funéraire* based on the combined evidence from these reports challenges the widely held notion that the funerary practices of the inhabitants of Susa involved second-degree or fractional burials.

Keywords: Susa, massif funéraire, cemetery, second-degree burials.

Introduction

Those familiar with the excavations of the celebrated Susa I cemetery will be aware of the substantial gaps, imprecisions and discrepancies embedded in the reporting of the data, which above all reflects the "disastrous (archaeological) methods" of Jacques de Morgan and Roland de Mecquenem (see Plate 1a; Amiet 1986: 30). As precarious as it is, this information has been used to formulate various, often conflicting, interpretations of the nature of the cemetery and the platform known as the "*massif funéraire*", and the social composition and ritual burial practices of the inhabitants of Susa at around 4000 BC.[1]

The present work results from my recent review of the available information on the excavation of the cemetery, taking especially into consideration the material from the *Roland de Mecquenem Archives de Suse (1912-1939)* published online in 2011 by Noëmi Daucé (2011; http://www.mom.fr/

[1] Susa I has been dated based on C14 sampling to ca. 4200-3800 BC by H. Weiss (1977: 356), and about 4000-3800 BC by G. Dollfus (1983: 167). For additional C14 sampling see F. Hole (1987: 58, Table 3).

mecquenem/). Based on my understanding of Mecquenem's annual reports and related publications I have arrived at the conclusion that the often-stated notion that the Susa I cemetery yielded predominantly second-degree or fractional burials does not stand up to critical scrutiny. I would like to share with the reader the evidence that has led me to this conclusion hoping to bring clarity to the nature of *les faits sur le terrain*.

To this end, I have arranged the following discussion in two parts. *Part I. The Excavations*, presents a chronologically arranged compilation of main publications by those individuals who led the excavations of the Susa I cemetery in the Acropole *grande tranchée*: Gustave Jéquier, Jacques de Morgan, Roland de Mecquenem, Jamshedji Maneckji Unvala, Jean Perrot and Denis Canal.[2] *Part II. Commentary*, discusses this evidence and brings in the opinions of various other scholars who have engaged with the topic. An attempt is made to clarify two main points: (IIa) the nature of the mudbrick platform known as "*massif funéraire*"; and (IIb) the characteristics of the cemetery and its human remains. To be as specific as possible I have often included direct quotes in italics and quotation marks, and since this work relies primarily on French language sources, I have translated critical passages into English and included the French original in footnotes.

Part I. The Excavations

[1905] G. Jéquier (Jéquier 1905). Work conducted in the Acropole *grande tranchée* during the 1902 season (see Plate 2). The opening of a 5m long trench (no. 34, Level V) at the edge of the mound unveiled a large concentration of Susa I painted pottery shards (Jéquier 1905: 11).[3]

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[2] I also include R. de Mecquenem's reports on work conducted in the Susa I levels of the Acropole (known as Sondages 1 and 2), which reveal additional insights into the material culture, technology and funerary practices of this period. The excavations conducted in the Susa I levels of the Acropole by Perrot (1972), part of the work conducted by Canal in 1975-7 in the Acropole, and the work conducted by Roman Ghirshman in the Apadana were never published. For details see below: [1972, 1975-7] Perrot and Canal; and Steve and Gasche (1990).

[3] The first trench in what would become the *grande tranchée* of Morgan was opened in 1898. It was originally labelled # 7 (*Mémoires de la Délégation en Perse* 1, 1900, Pl. II) and was 90 meters long (Morgan 1905: 5, *MDP* 7). The system of numbering trenches in J. de Morgan's *grande tranchée* into 7, 15 and auxiliary 7a, 7b, 15a, 15b, etc., was abandoned in 1905; trench #7 would be renamed trench #34.

[1906-7] J. de Morgan (Morgan 1907). Work conducted in the Acropole *grande tranchée* during the 1906-7 season (see Plate 2). Work was resumed in trench 34, Level V, under the direction of Joseph-Etienne Gautier, assisted by Mecquenem (Morgan remained in France during this season; Morgan 1907: 397). This trench reached virgin soil at +11 m — taking the Chaour River next to the tomb of Daniel, 67.50 m a.s.l., as reference level (Canal 1978: 22, nt. 40) — and unveiled further large quantities of Susa I pottery shards. Entire vessels, some finely painted, were preserved in groups of three or four towards the edge of the mound (Morgan 1907: 402).

[1908-1912] J. de Morgan (Morgan 1908, 1912). Work conducted in the Acropole *grande tranchée*, expansion of level V. Morgan (1912: 1-2) declares that during the 1907-8 excavation season he explored "*750 m² of the necropolis and about 1000 m² of the ruins of the village*".[4] A mass of piled earth towards "*the center of the ruins*" is interpreted as the base of an ancient wall, behind which lie ancient habitational ruins.[5] Morgan states that the "*nécropole*", which measured 3 m in depth and extended for about 30 m from the edge of the trench, was situated outside the ramparts of the *"first Susian agglomeration"* (see Plate 2).[6] Here the "*skeletal remains are still visible*", with the bodies "*most often*" in extended position and around 3-5 painted vessels, as well as weapons, tools, and ornaments placed around the head. Morgan (1908: 374; 1912: 6) assigned gender according to the presence of specific goods: females were identified by round copper mirrors and conical vases presumed to have contained makeup; males by copper axes. There were no traces of any construction

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[4] «*C'est ainsi qu'au cours de la campagne de 1907-1908 nous avons été à même d'explorer 750 mètres carrés de la nécropole et 1.000 mètres carrés environ des ruines de la ville.*»

[5] «*Nous avions constaté qu'en se rapprochant du centre des ruines on voyait d'abord un massif en terre pilée que j'ai supposé être la base d'un ancien rempart, puis, au-delà, des lits alternants de cendres et de décombres marquant l'emplacement des anciennes habitations.*» (Morgan 1912: 2).

[6] «*À l'extérieur de l'enceinte est la nécropole, renfermant sur une épaisseur de 3 mètres environ une foule de sépultures*» (Morgan 1908: 373). «*Déjà, pendant la campagne de fouilles de 1906-1907, les couches (Ve niveau) situées entre 20 et 25 mètres de profondeur avaient été sommairement examinées. Le bord occidental du tell, sur une largeur de 30 mètres environ et une épaisseur de 3 mètres, renfermait un grand nombre de sépultures qui fournirent une abondante moisson de vases peints en pâte fine et d'instruments métalliques très primitifs*» (Morgan 1912: 2).

or funerary chamber (Morgan 1908: 374; 1912: 6). Of a total of more than 4000 recovered vessels it is estimated that 2000-3000 were painted. In one publication the number of burials (*sépultures*) is reckoned at about 1000 (Morgan 1908: 374) and in another the *"open burials"* (*sépultures ouvertes*) are said to number around 2000, but ultimately Morgan (1912: 7) concedes that *"[…] it is impossible to know the exact number given the entanglement of the skeletal remains*".[7] He further reflects on the challenges encountered in attempting to preserve the bones and pottery (Morgan 1912: 7):

> *Due to the length of burial, the porosity of the yellow clays containing the burials, the high nitrate content of the soil and the high pressure of the layers above, the skeletal remains were crushed in almost all cases transforming bones into powder. They could not be gathered despite the care with which we surrounded the remains […]. Unfortunately the causes of destruction of the skeletons had a similar effect on the vases, as most are broken, or crushed.*[8]

[1912] R. de Mecquenem (Daucé 2011/Rapport 1912). Excavations in the Acropole (*tell de la citadelle*) on the eastern edge of the mound directly opposite the *grande tranchée* and necropolis, exploring the level of the "*archaic necropolis of painted vessels*" (Mecquenem 1912, Plan N°1, Area I). Mecquenem reports finding fragments of cups and large goblets decorated with a style analogous to those found in the necropolis.[9] His delight is palpable:

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[7] «*[…] mais il était impossible d'en tenir un compte exact par suite de l'enchevêtrement dans lequel se trouvaient parfois les squelettes*».

[8] «*Par suite de la très longue durée de l'ensevelissement, de la porosité des argiles jaunes qui contiennent les tombes, de la haute teneur en nitrates du sol ainsi que de la grande pression» exercée par les couches superposées, les squelettes sont écrasés dans presque tous les cas et les os, transformés en une matière pulvérulente, n'ont pu être recueillis malgré tous les soins dont nous avons entouré ces restes[…]. Malheureusement les causes de destruction des squelettes ont également eu leurs effets sur les vases; la plupart sont brisés, ou écrasés.*».

[9] The fine Susa I pottery excavated since 1906 first arrived in Paris in 1908. The earliest study of the pottery was offered by Edmond Pottier in 1912 (MDP 13: 27-103).

It was the result sought, the proof of the great extension of this civilization which occupied the base of the tell of the citadel and was also recognized in numerous points of the Ville Royale.[10]

[1926] R. de Mecquenem (Daucé 2011/Rapport 1926). Excavations conducted in the Acropole. Sondage I was opened at the edge of the mound near the castle in 1924, in part to verify the position of the Susa I pottery. Mecquenem found abundant fragments of Susa I ceramics and, at the end of the excavation season, the burial of a child inside a vessel with two handles (1926 photographic record, Pl. 1). Mecquenem indicates that he went through a potter's kiln but its precise location and characteristics are not clarified.

[1927] J. de Morgan (Morgan 1927). In this publication Morgan (*Première ville de Suse;* 1927: 48-74) restates and further elaborates on the characteristics of the town's ramparts and the burials. According to Morgan the cemetery occupied at least 750 m^2 and was extramural, being separated from the town by an irregular 1.5-2 m wide rampart located 30-40 m from the edge of the tell. The wall is described as being "*built of lumps of greasy clay shaped by hand and cemented with less oily clay used as mortar*."[11] Inside the town were found remains of walls of the same composition as the rampart, fragments of pottery, carved silex, stone tools, clay sling-bullets (*balles de fronde*), and animal and human clay figurines (Morgan 1927: 50-51).

Morgan claims to have opened more than 2000 burials that had been placed "directly in the ground" (*à même le sol*) with the body extended or flexed and wrapped in a shroud or clothes; the material occasionally identified as fine linen canvas. The funerary goods (vessels, tools, weapons and ornaments) were frequently placed near the heads of the deceased whose "*bones were so decomposed that they fell into dust when I touched them and, to my great regret, I could not remove from the earth any skull to be studied by specialists*" (Morgan 1927: 51-52). A single line drawing included by Morgan (Plate 1c) is the only existing visual documentation of a burial from the *nécropole* (Morgan 1927: 52, fig. 65).

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[10] «*c'était le résultat cherché, la prévue de la grande extension de cette civilisation; elle occupait la base du tell de la citadelle, elle avait été d'ailleurs reconnue en de nombreux points de la Ville Royale*.»

[11] «*… bâtie de mottes d'argile grasse façonnées à la main, cimentées à l'aide d'une argile moins grasse, employée comme mortier*.» (Morgan 1927: 50).

[1927] R. de Mecquenem (Daucé 2011/Rapport 1927). Twenty years after the discovery of the burials, Mecquenem hoped to show his assistant J. M. Unvala — a "*Zoroastrian priest, accustomed to considering the rite of exposure of the dead to the beak of birds of prey*" — the excavation level where the painted vessels had been originally found (*le niveau des vases peints du 1er style*). For this purpose he gave Unvala the opportunity to open a 10m × 4m trench in the southern wall facing the burial mound ("*tertre funéraire*").[12] Susa I ceramics were indeed detected and Mecquenem voiced Unvala's view on the nature of the finds: "*the religious law of Susa could not prevent the survival of Neolithic customs*" (see below [1928] Unvala).[13]

[1928] R. de Mecquenem (Mecquenem 1928b). These "Neolithic customs" were further articulated in the 1928 *MMAP* report. Mecquenem recalls that the *grande tranchée* measured 80 m long and 11.80 m wide. At its southwest end was the 3-4 m high, ca. 8 m diameter *butte funéraire* made of "*earth pounded extremely hard; it enclosed the graves pressed against each other*". He proposed that "*these burials were second degree. That is to say the bodies had been buried or exposed prior to their deposition in the cemetery; the skull was often in a cup; the long bones, gathered in a large cup*" (Mecquenem 1928b: 100).[14]

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[12] «*J'ai voulu montrer à M. Unvala le niveau des vases peints du 1er style. Il a fait une coupure dans la paroi Sud et la grande tranchée Morgan, au Ve niveau, en face du tertre funéraire qui nous donna une si merveilleuse collection de vases peints complets.*»

[13] «*Prêtre zoroastrien, habitué à considérer le rite de l'exposition des morts au bec des oiseaux de proie comme général et formel aux temps sassanides, il a été obligé de constater que la loi religieuse à Suse ne pouvait empêcher la survivance des habitudes néolithiques*». Jamshedji Maneckji *Unvala* (1888-1961) was an Indian Parsi Priest and scholar of Pahlavi. For more on Mecquenem and Unvala, Elamite funerary rituals and Zoroastrianism, see Mecquenem (1931: 342).

[14] «*Nous rappellerons qu'une grande tranchée de 80 mètres de longueur, de 11 m 80 en largeur, avait atteint le sol naturel à 9 mètres au-dessus du niveau moyen de la rivière de Suse, à 23 m 50 au-dessous de la surface des ruines. À son débouché sud-ouest, elle avait rencontré une butte funéraire enclavée dans les couches supérieures; sa hauteur était de 3 à 4 mètres, son diamètre à la base de 8 mètres environ. Elle était constituée par de la terre pilée extrêmement dure; elle renfermait des sépultures pressées les unes contre les autres, avec un mobilier de vases le plus souvent décorés de peintures; c'est le Ier style de Suse.*»… «*enfin, que ces inhumations étaient au deuxième degré, c'est-à-dire que les corps avaient été enterrés ou exposés préalablement à leur dépôt dans ce cimetière; le crâne était souvent dans une coupe; les os longs, rassemblés dans un grand gobelet.*» (Mecquenem 1928b: 100).

[1928]. J.M. Unvala (Unvala 1928). The same year Unvala published *The Ceramic Art of Susa* in which he emphasizes the independent nature of his activities in the necropolis.[15] He reports that "*On the Tell of the Citadel I opened a trench 10 m. long and 4 m. broad on the fifth niveau of the big south-west trench, exactly opposite to the tumulus of sepulchral vases of style No. 1 of the first period*". Here the tumulus or "necropolis of ancient Susa" is described as being square in shape, measuring 7 m × 7 m at its base and 3 m in height, and it yielded several hundred painted sepulchral vessels (goblets, jars, cups, and bowls) all laid in a heap. In Unvala's (1928: 2) view "*the tumulus proves the existence of the custom of a second burial of the dead among the ancient Elamites; which has persisted through the ages in Susa, and is still prevalent among the Shiite Mohammedans*".

[1928, 1930, 1931, 1932] R. de Mecquenem (Daucé 2011/Rapports 1928, 1930 1931, 1932). Excavations conducted in the Acropole, Sondage I. At a depth of 10 m below the second level Mecquenem recorded a circular, 1.20 m diameter kiln (1928 photographic record, pl. XV,4) and large painted vessels probably to be associated with the Susa I level (Mecquenem 1928a). Additional kilns and numerous fragments of painted vessels are mentioned in the 1930 *rapport*. The largest kiln was 1.4 m high and 1.25 m in diameter, with 25 cm thick walls and a vault pierced by uptakes. The others were about 0.5 m high and 0.90 m diameter. Mecquenem believed these kilns were used to make pottery sometime around the Susa I period.[16] He also refers to a possible 1.5 m × 4 m floor or working area and an earth burial of a child holding a Susa I cup, adding that "*the practice of second degree burials was not always observed with young individuals*". In addition to the painted pottery, Mecquenem found undecorated red

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[15] "*It will not be, I think; out of place to mention here the results of excavations, which I carried on at my own expense on the Tell of the Citadel and on the Tell of the Apadana with the kind permission of M. de Mecquenem, Director of the French Archaeological Mission in Persia"* (Unvala 1928: 12).

[16] «*Au-dessus de ce sol, sur une hauteur de 3 m,50 se trouvaient de nombreux fragments de vases peints, des outils en os et en pierre; cinq chambres à feu ont été déblayées: la plus grande avait une hauteur de 1 m,40, un diamètre extérieur de 1 m,25 — l'épaisseur des parois en terre durcie par le feu, était de 0 m,25 — la voûte était percée de carneaux en quinconce. Les autres chambres avaient en général 0 m,50 de hauteur — un diamètre intérieur de 0,90. Nous pensons que ces fours appartiennent à une époque voisine de la première civilisation de Suse; bien que les foyers aient été certainement creusés dans les couches les plus anciennes.*»

ware, silex, terracotta animal figurines, clay stamp-seals, and bone tools. He reports that he was able to "*reconstruct a goblet decorated with three venomous upright snakes*" (1931 photographic record, pl. IV,1).

[1933] R. de Mecquenem (Daucé 2011/Rapport 1933). Additional excavations conducted in the Acropole, Sondage I. Exploitation of the lower level (-7.75 m to virgin soil) uncovered bases of silos (*fonds de silos*), two pottery kilns (1933 photographic record, pl. III, 4), stamp-seals (1933 photographic record, pl. III, 5), terracotta animal figurines, sling-bullets made of sundried clay, flint and obsidian blades, fragments of small obsidian cups, and numerous fragments of painted and red slip vases. No evidence of copper or metal work was observed.

Work in the Acropole Sondage 2 reached layer "D" (9.10 m-11.20 m below level II). A trench 100 m long and 3.5 m wide was opened down to 12.60 m (below level II). One relatively well preserved kiln (see Plate 1b) had a fire-chamber door and was composed of a 1.76 m diameter internal circular chamber surmounted by a 28 cm thick sill held up by a central pillar and pierced with 45 uptakes. It was found in association with numerous fragments of Susa I painted and red slip pottery (Mecquenem 1934: 205, fig. 42; 1933 photographic record, pl. III, 6).

[1934] R. de Mecquenem (Daucé 2011/Rapport 1934 [Mecquenem 1934a]; Mecquenem 1934b). Continuing work in the Acropole, Sondage 1; reference is made to excavations in "Trench B". The lower level trench was expanded to about 5m above virgin soil. Mecquenem reports that "*We cleared some graves distinguished by fragments of painted ceramic; we set aside only small samples of seeds and some figurines*."

Work conducted in the Acropole, Sondage 2, east expansion (*attaque vers l'est*) (from -9.8 m to -11.8 m), unveiled fragments of Susa I pottery shards, small well-preserved vases, a small marble spoon and some terracotta figurines. No metal was found. The absence of intact vases lead Mecquenem to believe that "*the Susa I graves were systematically destroyed in the search for metal*."[17] An expansion to the west (*attaque vers l'oest*) (from -7 m to -11.8 m) uncovered silo bases, potter's kilns, archaic seals and fragments of Susa I pottery.

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[17] «*… que les tombes de Suse I, ont été systématiquement détruites dans le but de se procurer du métal.*» (Mecquenem Rapport 1934).

[1935-1936-1937] R. de Mecquenem (Daucé 2011/Rapports 1935, 1936, 1937). Work conducted in the Acropole (Sondage 2?). Mecquenem encountered silo bases, kilns and numerous burials of children "*with the bodies lying on beds made of painted pottery or red slip shards*". Each burial included a small vessel and a stamp seal, and sometimes animal figurines were found (Mecquenem 1936; 1937 photographic record, pl. IV,3 and pl. VI,1). In these graves of the "*oldest Susian civilizaton*" several small painted vessels were found intact (1936 photographic record, pl. III, 2).

[1938] R. de Mecquenem (Mecquenem 1938b; Daucé 2011/Rapport 1938a). Although this year work concentrated mostly on Tchoga Zanbil, fragments of painted Susa I pottery were recovered at Susa at the bottom of the -9 to -11 m trench in Chantier 2. Mecquenem (1938b: 138) elaborates on the provenience of Susa I painted pottery:

> *…it came out of a burial mound ca. 3 m high and ca. 10 m in diameter at the base. It was formed of a heap of burials crushed one against the other. With the bones were, in addition to the pottery, stone and copper objects.*[18]

[1939] R. de Mecquenem (Daucé 2011/Rapport 1939). While Mecquenem was supervising work at Tchoga Zanbil this year, work conducted in Chantier 2 under the supervision of Mr. Mustafavi uncovered numerous fragments of painted Susa I pottery. Two small vessels were found complete (1939 photographic record, pl. XI) and another two vessels were able to be restored.

[1943] R. de Mecquenem (Mecquenem 1943a). In an article dedicated to funerary practices at Susa, Mecquenem summarizes the evidence that emerged from the southern and western edges of the Acropolis (1943a: 133-4):

> *We found children's graves. The body extended over a mat or a bed made of fragments of pots. The funerary goods comprised painted and unpainted small vessels; figurines, usually animal and sometimes*

[18] Translated by Phylis Ackerman (Mecquenem 1938b).

> *painted; and a stamp seal. We did not find burials of adults. In the "butte funéraire" however, we found numerous burials pressed against each other and piled up, designated by ceramics as funerary goods: […] We found long bones in tall goblets and skulls placed in cups. These burials are therefore second degree. There was temporary exposure of the dead bodies until their defleshing or temporary burial until the same goal was reached. The regularity of the series of vases assigned to each burial reflects a particular care for rituals […]. We can affirm that children up to 12 years were buried.*[19]

[1943] R. de Mecquenem (Mecquenem 1943b). This summary of the 1933-9 excavations conducted in Sondage 2 reports that the soil contained many painted and unpainted pottery shards, flint and obsidian blades, silo bases, and pottery kilns in the form of simple cylinders measuring 0.50 m high and 0.70 m diameter. Stones were rare; metal was not observed. Also found were child graves in which the body was laid on its side, usually with folded limbs, on a bed of pot fragments. Various grave goods accompanied the body: small vessels, small terracotta dolls, small animal figurines, a stamp seal, clay beads, spindle whorls, small polished stone axes, and sundried or terracotta sling-bullets (Mecquenem 1943b; figs. 2 and 3). Mecquenem also summarizes the excavations conducted in the necropolis during the 1936-7 season:

> *We did not encounter adult graves; so it seems that they were exposed, because their completely defleshed remains were buried in a necropolis mound; during the 1936-37 season, we worked around the necropolis excavated from 1907 to 1909, and finished what remained. We recall that it was a truncated-cone shaped mound of approximately 3m tall and 12m diameter at the base. The graves were tight*

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[19] «*Nous y avons trouvé des sépultures d'enfants. Le corps était étendu sur une natte ou un lit de fragments de pots. Le mobilier comprenait des vases de petite dimension, peints ou non, des figurines, généralement animales, parfois peintes, un cachet bouton. Nous n'y avons pas trouvé de tombes d'adultes. Dans une butte funéraire (A), se trouvaient, au contraire, de très nombreuses tombes pressées les unes contre les autres et entassées, indiquées par un mobilier céramique […]. Nous avons trouvé des os longs dans de grands gobelets, des crânes placés dans des coupes. Ces tombes sont donc au second degré, soit qu'il y ait eu exposition temporaire des corps jusqu'à leur décharnement, ou inhumation provisoire jusqu'à ce que le même but ait été atteint […].Nous pouvons affirmer que les enfants jusqu'à 12ans étaient inhumés.*» (Mecquenem 1943a: 133-4).

against each other; the bones in bundles, often a skull in a cup, the long bones in goblets. It is certain they are second degree burials and it is incorrect, as written by J. Morgan (Mem. of the DSP, Vol. XIII, · p. 7), that the bodies were usually placed extended; inaccurate again that the necropolis had an area of 750 m² (Mem cit, p 2…); it was about 120 m².[20]

[1972, 1975-7] J. Perrot and D. Canal (Perrot 1972; Canal 1978a, Part 1). Further excavations of the Acropole were conducted in 1972 by Perrot, who detected the remains of two disturbed burials leaning against the preserved faces of the *massif funéraire* platform. "*In the absence of a full technical report for the 1972 operations*" Canal (1978a: 33) would later describe these two burials using Perrot's field notes in a report on his own 1975-1977 excavations in Chantier 2 (See Plate 3) entitled *Travaux de la terrasse haute de l'acropole de Suse*, *Part 1* (Canal 1978a: 18, nt. 34). Part 2, which was to be devoted to documenting the artefacts (Canal 1978a: 34, and bibliography "*A paraître*"), was never published to my knowledge.

One of Canal's objectives was to clarify stratigraphically the nature of the high terrace and the artificial platform he calls "*massif funéraire*" and to ascertain the relationship between the two (see Plate 3). He assessed that the platform was founded directly on virgin soil 10.5 m above the level of the surrounding alluvial plain (78 m a.s.l). The high terrace was established about 1 m higher at 11.5-11.75 m (79 m to 79.25 m a.s.l). Remains of two sides of the *massif funéraire* were recognized; a north face preserved 14 m in length and a west face preserved to 7 m in length and ca. 1.7 m in height. Wherever the internal structure of the *massif* could be verified, it was found to be made of layers of sundried bricks (preserved up to a maximum of 15 layers).

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[20] «*nous n'avons pas rencontre de tombes d'adultes; il semble donc que ceux-ci étaient exposes, puisque leurs restes complètement décharnes étaient inhumes dans une butte nécropole; au cours de la saison 1936-1937, nous avons travaillé autour de la nécropole fouillée de 1907 à 1909, et termine ce qui en subsistait; nous rappelons qu'il s'agissait d'une butte en forme de tronc de cône d'environ 3 m. de hauteur et d'une douzaine de mètres de diamètre á la base; les tombes étaient serrées les unes contre les autres; les ossements en paquets, souvent un crane dans une coupe, des os longs dans des gobelets; il est donc certain qu'il s'agit de tombes au deuxième degré et il est inexact, comme l'a écrit J. de Morgan (Mem. de la D.S. P., vol. XIII, p. 7), que les corps aient été places le plus souvent allonges, inexact encore que la nécropole ait eu une superficie de 750 m² (Mem. cit., p. 2); elle avait environ 120 m².*»

Four occupational layers (in *strate* 46, 43, 40 and 38) with remains of floors and walls were recognized by Canal in association with the platform *massif funéraire* (see Plate 3). The first occupational layer (in *strate* 46, level 11B) included the remains of a wall on virgin soil. The layer above it (*strate* 45) comprised a layer of ash averaging 36 cm thickness with a high concentration of wood charcoal, pottery shards, "kitchen debris", fragments of stones shattered by fire and some baked bricks. The second layer of occupation (in *strate* 43, level 11A) was positioned under the high terrace and reflects a domestic environment including the remains of walls (one preserved to 8 m in length), a paving area of 12.5 m^2, and a cooking hearth (Canal 1978a: 30-31). The third (in *strate* 40, level 10B) and fourth (in *strate* 38, level 9) occupational layers were clearly linked to the *massif funéraire* and the high terrace. The last vestiges of the *massif funéraire* platform are marked by ashes and heavy wood charcoal (in *strate* 37 and 36).

Perrot's field notes indicate that one of the two burials, *Burial I level 11 (loc. 123),* was found at the end of the 1972 season in the layers of ash materials covering *strate* 46 (level 11B) (Canal 1978a: 33). It was slightly encased in the masonry of the western face of the *massif* and appears to have been disturbed and partially destroyed by the work of Mecquenem.[21] It was described as a kind of container whose walls were lined with sun-dried bricks. Four bricks placed on edge define the four walls, another flat brick forms the bottom, and eight 40 cm × 30 cm × 11 cm bricks placed on edge form the lid (Canal 1978a: 33).[22] Inside were found four vessels, the top of a skull and two fragments of long bones belonging to a leg (a femur and a tibia). According to Canal's interpretation of this evidence: "*As much as one can extrapolate from such fragmentary remains, it appears that we are in the presence of a secondary degree burial. Like the ones identified by R. de Mecquenem*".[23]

The second burial, *Burial II level 10B (loc. 129)*, is comparable with the first and its southern section may also have been partially destroyed by

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[21] «*La tombe paraît avoir été perturbée et détruite en partie par les travaux de R. de Mecquenem*» (Canal 1978: 33)

[22] «*Une brique posée à plat en forme le fond; quatre briques dressées de chant en définissent les quatre parois; la couverture est faite de huit briques posées de chant*».

[23] «*Pour autant que l'on puisse extrapoler à partir de restes aussi fragmentaires, il semble bien que l'on soit en présence d'une sépulture au second degré, comme celles que R. de Mecquenem avait relevées*» (Canal 1978: 33).

the work of Mecquenem. It was placed atop a flat recess resulting from a realignment of the northern side of the platform (level 10A),[24] and was constructed as a container with sundried bricks lining the walls. Two bricks placed on their long side formed the west and north walls, while the east side was delimited by the *massif funéraire*. A cover was created using two horizontally laid rectangular bricks (45 cm × 30 cm × 11 cm) resting on the western and northern walls and against the *massif funéraire* to the east. Inside was a skull "*enveloppé*" in a fine mat and some vessels in clay and stone. Canal (1978a: 34) asserts that "*it is again a second degree burial*".[25]

Canal (1978a: 32) was of the opinion that Mecquenem had "*correctly identified the butte funéraire around and over which clustered numerous burials with their second degree interments*". Despite acknowledging that he was dealing with hypotheses and speculations surrounding funerary practices that were rarely attested (Canal 1978a: 33-34), he proceeded to elaborate on the originality of the platform *massif funéraire* with its (second degree) funerary rites (Canal 1978a: 38):

> "*Moreover, as has been said above, the second degree burials reflect regular funeral rites in a society with religious ideas sufficiently defined and conceptualized to devote an entire sector of the agglomeration, since its foundation, to such practices. It may therefore equally be a sort of platform for exposure (or the basement of a building intended for this use) for the defleshing of the body*".[26]

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[24] The exact location of this burial remains unclear.

[25] Canal's use of the word "enveloppé" in regard to the matting found with the skull seems to imply its isolation from the body and might therefore be suggestive of secondary burial; yet oddly enough he himself does not stress this point when expressing support for R. de Mecquenem's theory regarding second degree burials. Perhaps then, the head is to be understood as shrouded rather than completely wrapped in the mat.

[26] «*Par ailleurs, ainsi qu'il a été dit plus haut, les inhumations au second degré témoignent de rites funéraires réguliers dans une société aux idées religieuses suffisamment définies et conceptualisées pour consacrer tout un secteur d'une agglomération, dès sa fondation, à des telles pratiques. II pourrait donc s'agir également d'une sorte de plate-forme d'exposition (ou de soubassement d'une construction destinée à cet usage) pour le décharnement des corps.*»

PART II: COMMENTARY

IIa. The mudbrick platform known as "*Massif Funéraire*"

The reported characteristics of the mudbrick platform in the southwest section of the Acropole and associated burial remains are difficult to reconcile (see Table 1). Given the inconsistencies in the labels applied, dimensions provided and physical characteristics described, one wonders whether the authors were even referring to the same structure; and if so, why there are so many discrepancies.

In the first place, Morgan (1908, 1912) had identified a ca. 750 m^2 densely packed extramural cemetery separated from the village by a wall.[27] This wall, detected 30-40 m from the western edge of his 90 m long trench, is described as 1.5-2 m in width and made of lumps of clay cemented with mortar. Mecquenem and Unvala interpreted the cemetery as a single mound of pounded earth containing a high concentration of burials pressed up against each other (Mecquenem 1928b; 1938: 138). Unvala (1928) referred to it as a "tumulus" while Mecquenem used the terms "*nécropole archaïque*" (1912), "*tertre funéraire*" (1927) and "*butte funéraire*" (1928b). The shape and dimensions of this structure proposed by these two authors are contradictory. Unvala (1928) branded it a square *tumulus* measuring 7 m × 7 m, while Mecquenem maintained that it was a circular structure, but cited ever-increasing dimensions over the years: 8 m in 1928; 10 m in 1938; and 12 m in 1943 (1943b). Its height varied much less markedly: 3-4 m in 1928 (Mecquenem 1928b:100) and 3 m in 1938 (Mecquenem 1938; 1943b). Mecquenem (1943a, 1943b) disagreed with Morgan's purported 750 m^2 cemetery expanse, proposing a far more modest area of about 120 m^2 or ca. 12 m diameter.[28] Canal (1978a) later clarified that the internal structure of the "burial mound" — previously described as "pounded earth" — was actually a platform of layered sun-dried mudbricks measuring a minimum of 14 m × 7 m × 1.7 m at its base. This platform, which Canal renamed "*massif funéraire*", was closely

[27] It appears that Morgan calculated the 750 m^2 dimension of the cemetery by adding the width of the additional four flanking trenches of the *grand tranchée* (each trench being 5 m wide) to form a total 25 m wide trench, and multiplying this by the length of 30 m (30 m × 25 m = 750 m^2).

[28] 12 m diameter = 37.70 m circumference = 113m^2 area; only slightly different to his approximation of 120m^2.

Author & Year	Location	Measurements	Structure	Name
Morgan 1907, 1908, 1912, 1927	rampart situated ca. 30-40 m from the western edge of trench	extramural cemetery 750 m^2; city rampart 1.5-2 m wide	made of adobe (mass of piled earth)	*town rampart*
Mecquenem 1912	eastern edge of Acropole	not reported	not reported	*archaic necropolis*
Mecquenem 1927	*grande tranchée*	not reported	not reported	*tertre funéraire*
Unvala 1928	*grande tranchée, southern wall facing the burial mound*	7 m × 7 m 3 m high; surface area 49 m^2	not reported	*tumulus*
Mecquenem 1928	*grande tranchée*	8 m diameter 3-4 m high; area about 50 m^2	pounded earth enclosed graves pressed against each other	*butte funéraire*
Mecquenem 1938	*grande tranchée*	10 m diameter 3 m high; surface area about 78 m^2	formed of a heap of burials crushed one against the other	*burial mound*
Mecquenem 1943	*grande tranchée*	12 m diameter 3 m high; surface area about 114 m^2		*butte funéraire*
Canal 1978	*grande tranchée*	14 m × 7 m long and 1.7 m high; minimum surface area 98 m^2	layers of sundried bricks	*massif funéraire*

Table 1. The Rampart and the Funerary Mound.

related to two construction levels separated by a thick layer of ash and wood charcoal.

In 2002, Marie-Joseph Steve, François Vallat and Hermann Gasche (2002: 403) remarked on the reigning confusion in the presentation of the facts concerning the *nécropole* and the *massif funéraire* and the resulting speculation embedded in the interpretation of these features. They then put forward an alternative scenario: *"Why not consider that the building recognized by Canal actually represents the remains of a primitive terrace whose ruin was used as a cemetery after being abandoned or destroyed?"* (Steve, Vallat and Gasche 2002: 404).[29] Following Morgan these authors place the burials "*in the vicinity of the city gates of the town contemporary with the necropolis*".[30]

[29] «*…la construction reconnue par Canal représente en réalité les restes d'une terrasse primitive dont la ruine aurait été utilisée comme cimetière après son abandon ou sa destruction*».

[30] «*Les sépultures du «massif» se trouvaient aux abords des portes de l'enceinte de la ville contemporaine de la «nécropole»*».

The presence of a wall around the Acropole settlement, which would make the cemetery extra-mural, is theoretically attractive if we consider that a city wall had shielded the contemporary neighbouring Apadana Susa I village (Steve and Gasche 1990: 26, and nt. 28). This, however, was a massive rampart ca. 6.40 m wide at the base, preserved up to 3.3 m in height and set on a 70 cm high foundation of sundried bricks with adobe mortar. In my opinion, Morgan's comparatively diminutive ca. 1.5-2 m thick wall most likely cannot be interpreted as the remains of an Acropole rampart. Furthermore, to my knowledge no archaeological evidence for a city gate in the Acropole has been found. Instead the wall structures and artefacts reported by Morgan "inside the rampart" together with the paving, cooking hearth and cooking debris excavated by Canal in level 11 point to a domestic environment without deliberate separation from the cemetery and mudbrick platform. Large volumes of ash and wood charcoal in the domestic area strongly suggest the presence of large timber structures destroyed by fire. The platform was built earlier than the High Terrace and may have been abandoned soon after the latter was raised, suggesting perhaps a transfer of purpose.

IIb. The Cemetery and the Nature of the Human Remains

From the reported evidence it is impossible to deduce how many people were actually buried in the cemetery excavated at the western edge of the Acropole by Morgan in 1906-1909 and in 1936-37 by Mecquenem (1943b). Morgan (1912: 7) emphasized that an exact number was unattainable due to the entanglement of the skeletal remains, which had been "*crushed in almost all cases transforming bones into powder*". Without offering any particular reasoning, he did, however, propose estimates in the range of 1000 to 2000 burials.[31] Frank Hole (1989: 152-3) reached an estimate of

[31] A tally of the painted vessels deposited in the cemetery was impossible to establish due to their fragmented state, but Morgan estimated the number might reach as high as 4000 vessels. The great dissemination of Susa I pottery with all its variances throughout the excavated Susa I layers of the Acropole mound suggests that these evaluations were rather conservative; yet the exact number remains a matter of guess work. The planned publication of the vessels and related material assemblages unearthed in 1972 and 1975-7 by Perrot and Canal (Acropole 2) never appears to have come to fruition (Canal 1978b: 169, nt. 14 and 173, nt. 17); we have only a small sample of Susa I pottery published by Canal, but none of it was yielded from the burials (1978b: 173-5: fig. 25). Based on the archaeological work conducted by A. Le Brun in the Acropole 1 (1971: 172), together with the known numbers of Susa I painted pottery vessels scattered in museums outside

between 750 and 1000 burials, making the assumption that around 2000 vessels had been present in the cemetery and that in the late Ubaid period most individuals were interred with an average of 1-3 ceramic vessels. Hole adds that this number could not account for all of Susa's inhabitants for a period of even 100 years and that "there would have been 1500-3750 *burials*, perhaps occupying 1-3000 *tombs*".[32]

It is in the assessment of the treatment of the dead that the disagreements are perhaps most striking and the theories most creative. With the exception of the single line drawing by Morgan depicting the skeletal remains of an individual interred in a flexed position, the burials were not visually documented.[33] Therefore any study of the cemetery must rely almost entirely on the laconic descriptions written by the excavators. Morgan (1908: 374, 1912: 6; 1927: 51) referred to first-degree inhumations piled up in "open burials". The bodies were either extended or flexed, and sometimes wrapped in fine linen canvas (Morgan 1908: 374, 1912: 6). Mecquenem considered the numerous child interments from Sondages 1 and 2 (1926, 1930, 1936, 1937) also as primary, and in several cases the body was described as lying on a "bed of pottery shards".[34] Yet for the adults (defined as over 12 years old) who had been excavated much earlier under Morgan's direction he took a strong stance in favour of second degree interment, recalling that their skulls had been found in bowls and long bones in beakers (Mecquenem 1928b: 100). On this matter he deferred to the opinion of Unvala, whose familiarity with the practice of secondary burial evidently qualified him as a suitable judge (Mecquenem 1927; Unvala 1928). Pierre Amiet (1966: 41) openly expressed his doubts about Mecquenem's recognition of second degree interments, warning that "*this observation, as most of those made by the same archaeologist, needs to be verified*".[35]

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and inside Iran, F. Bridey (2011: 29, nt. 71) suggests that about 7000 vessels were found in the necropolis.

[32] I am unable to grasp Hole's distinction between burials and tombs. Morgan (1908: 374) uses the terms *sépultures* and *tombes* interchangeably. In addition, he indicates that: *"we did not find traces of any construction, any (funerary) chamber*".

[33] Hole published the drawing in 1992 (p. 27) without reference and in 2010 (p. 231, fig. 15.4) with a misquoted caption: "Drawing of burial in Susa cemetery; de Morgan 1912: fig. 113". This reference in fact refers the reader to a line drawing representing a "*coupe théorique des ruines de l'Acropole à Suse*" (Morgan 1912: 23, fig. 113).

[34] Mecquenem (1934a) indicates that a number of burials were cleared but no detailed information about them is provided.

[35] «*Toutefois cette observation, comme la plupart de celles du même archéologue, demanderait à être vérifiée*.»

In a commanding contribution to the study of the early periods of the Acropolis at Susa, Robert Dyson (1966: 198) echoed Mecquenem's interpretations but avoided the term "secondary burial", instead employing the rather ambiguous term "fractional": "*The bodies were interred as fractional burials one above the other to a depth of up to five bodies*". The Merriam-Webster dictionary defines a fractional burial as one in which only part (as the head) of a body is interred;[36] however, it seems to be used by Dyson and subsequent commentators simply as an equivalent to "secondary burial".

Alain le Brun (1971: 207) also accepted the notion that secondary burial was standard practice during the Susa I period. Working in the Acropole (Chantier 1) in 1971 he encountered a small pit tunnelled from level 23 that yielded an adult skull and a stamp seal. This single skull was taken as verification of the "*second degree inhumations discovered by Morgan and Mecquenem*" and the interpretation extended to other areas of the site: "*this evidence suggests that second degree inhumations existed outside the "butte funéraire*"."

The two further burials found a year later by Perrot in association with the *massif funéraire* had been placed inside "containers" defined by sun-dried brick walls and cover, and the masonry of the *massif*. In both cases the fragmentary skeletal remains of a single individual and related grave goods were found. Despite noting that both burials appeared to have been previously disturbed and partially destroyed by the work of Mecquenem, Canal adopted the position that these too had been second degree interments.

Judith Berman (1987: 55) took a more scientific approach in elaborating on the ritual aspects of the burials, but her interpretations still rested on the earlier assumptions that the burials were secondary. From an analysis of 32 Susa I pottery shards, Berman (1989: 269, 271; 1994: 28) inferred that the fine decorated bowls and beakers were made in villages outside of the city and were either carried "*along with the remains of the local elite for burial at the sacred site*" or brought into the city as tribute and used as containers for secondary burials of the Susian elite.[37] The possibility raised by Berman

[36] For the different meanings applied to this term in archaeological funerary contexts see Sprague (2005: 75).

[37] An opinion based on neutron activation analysis results of 32 samples of fine painted beakers and bowls said to have originated from the Susa *nécropole* (Berman 1987).

of the transport of deceased elites from surrounding communities has inspired reconstructions of a complex ritual process culminating in secondary deposition in the Susa I cemetery (Matthews 2003: 107; Charvát 2005: 97, 105). Berman's conclusions, however, were not supported by later studies of Susa I painted ceramics housed at the Musée d'Archéologie Nationale in St. Germain-en-Laye conducted by Lahlil et al. (2009: 779, 780, 788), which revealed great homogeneity in the chemical compositions of the vessels and suggested that the raw materials may have had a local Susa origin.[38]

Susan Pollock and Frank Hole have contributed extensively to conversations about Near Eastern prehistoric societies, frequently employing the information provided by the excavators of the Susa I cemetery and too often following the interpretations of Unvala, Mecquenem and Canal. Thus Pollock (1989: 284-52, 287) raised the possibility that atop the platform had been "*perhaps a building or some kind of installation for exposing the bodies for defleshing prior to burial*". In a 1992 article dedicated to interpreting "*The Cemetery of Susa*", Hole (1992: 26-27) adopts Dyson's term "fractional": *"not all the bones are present — as has been demonstrated by Perrot and Canal, the necessary corollary is that interment took place after the flesh had decomposed"*. He then makes five main inferences "*from the limited evidence*", of which all except the third remain speculative: "*(1) The cemetery covered a relatively small area;*[39] *(2) Clean earth surrounded the bodies;*[40] *(3) The bodies were stacked closely one upon the other;*[41] *(4) Many burials took place after the flesh had decomposed;* and *(5) A large number of burials had occurred simultaneously*."

The theory that secondary interment was the characteristic mode of burial in the Susa I cemetery does not stand up to critical scrutiny. At least four major weaknesses can be highlighted: (i) the evidence and interpretation provided by Mecquenem was anecdotal and first appeared long after

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N. Kouchoukos (1998: 154) also concluded that the open bowls had been manufactured at many places across the Susiana plain (see Hole 2010: 24).

[38] For the local origin of the clay used in the manufacture of the vessels see also Bridey (2011: 61).

[39] As we have seen, the extent of the cemetery remains disputed, its area may have had a maximum extent of 750 m^2 (proposed by Morgan) and a minimum of ca. 50 m^2 (proposed by Mecquenem and Unvala).

[40] I am unable to find evidence in the reports in support of this statement.

[41] E.g. Mecquenem (1943) "*burials pressed against each other and piled up*".

the excavations took place; (ii) Mecquenem's explanation for the presence of disarticulated human remains does not seem to consider the "systematic" looting and damage of the Susa I graves revealed by his own excavations of Sondage 2 in the Acropole (Mecquenem 1934a); (iii) The single skull found by Le Brun and two disturbed burials found by Perrot, which in fact could be intrusive (Steve, Vallat and Gasche 2002: 404), do not suffice as evidence for making blanket statements about the cemetery and Susa I burial practices; and (iv) the perception of secondary interment is inconsistent with the known contemporary (and slightly earlier) funerary traditions attested in the neighbouring towns of Djaffarabad and Bendabal, located 7km and 11km north of Susa respectively. According to the excavator, Geneviève Dollfus, these were all primary burials in pits with sun-dried brick-lined walls and sometimes a brick cover. The bodies were extended or flexed, sometimes wrapped in a mat, with funerary goods placed near the head (see Plate 4; Dollfus 1978: 1983; Hole 1989: 166). It is perhaps, therefore, Elizabeth Henrickson (2011) who has come closest to the truth of the Susa I cemetery:

> *Although the large Susa A burial facility appears to have been unique in Chalcolithic Persia, it nevertheless reflected the Middle-Late Chalcolithic lowland custom of burial in brick tombs, demonstrating a formal standardization in the treatment of the dead: one corpse to a tomb, supine in an extended position.*

Based on the pattern of child and adult interments more broadly in the Ubaid period, it is very likely that the human remains reported by Morgan and possibly even some of the presumed children found by Mecquenem had been buried inside brick tombs similar to those found by Canal and Dollfus, while younger children were buried in pots, sometimes under the floors of houses.[42]

In conclusion, over the years with each contradictory report and unfounded claim scholars interested in the Susa I cemetery have had to steer their scholar ship through the fog of yet "*another dilemma to clarify*" (e.g. Steve, Vallat and Gasche 2002: 404). This examination has shown that the excavation reports of J. de Morgan, R. de Mecquenem and J.M Unvala do not provide a reliable foundation for interpretations of the cemetery

[42] For child burials see L. Chiocchetti 2007.

and related mudbrick platform, and that subsequent excavations were not able to adequately resolve many of the questions left outstanding by their work.

We have seen that the notion of secondary interments emerged first with Mecquenem and Unvala in 1927-1928. Its origin can be related, it seems, to the religious affiliation of Unvala, a Zoroastrian priest who recognized the "persistence through the ages" of funerary practices involving second-degree interments. The variously articulated existence of a "burial mound" (*tertre, butte, tumulus*), later clarified by D. Canal as a platform, also finds it origin in the works of Mecquenem and Unvala. Since we must rely on the results of large-scale excavations by archaeologists oblivious to the principles of archaeological stratigraphy and detailed recording, we will probably never know the true nature of the site and must approach the material as conservatively as possible.[43] I am therefore inclined to regard the interments in the cemetery as consistent with the primary burial practices attested more widely in Ubaid culture.

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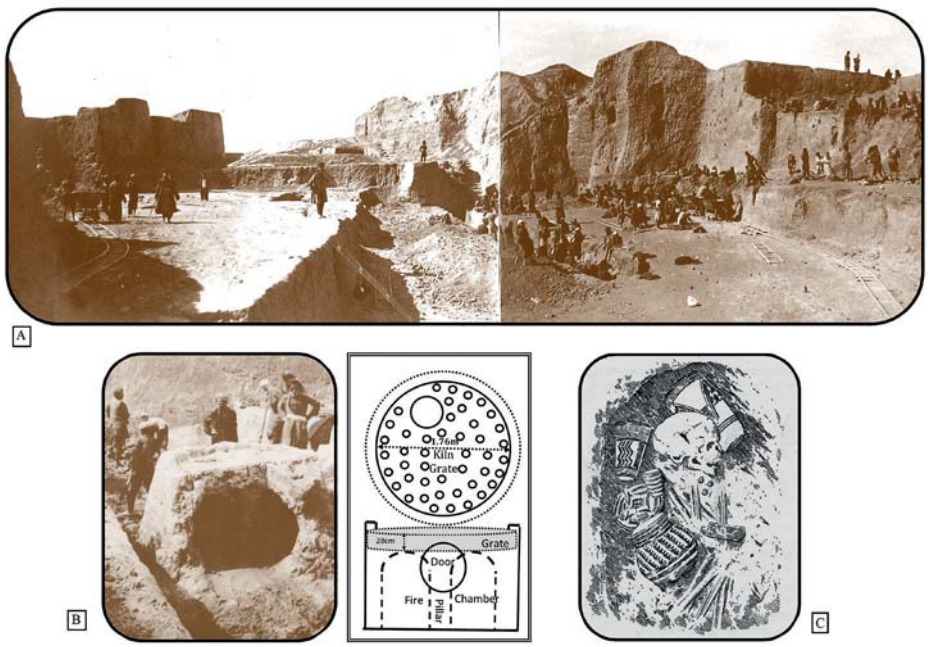
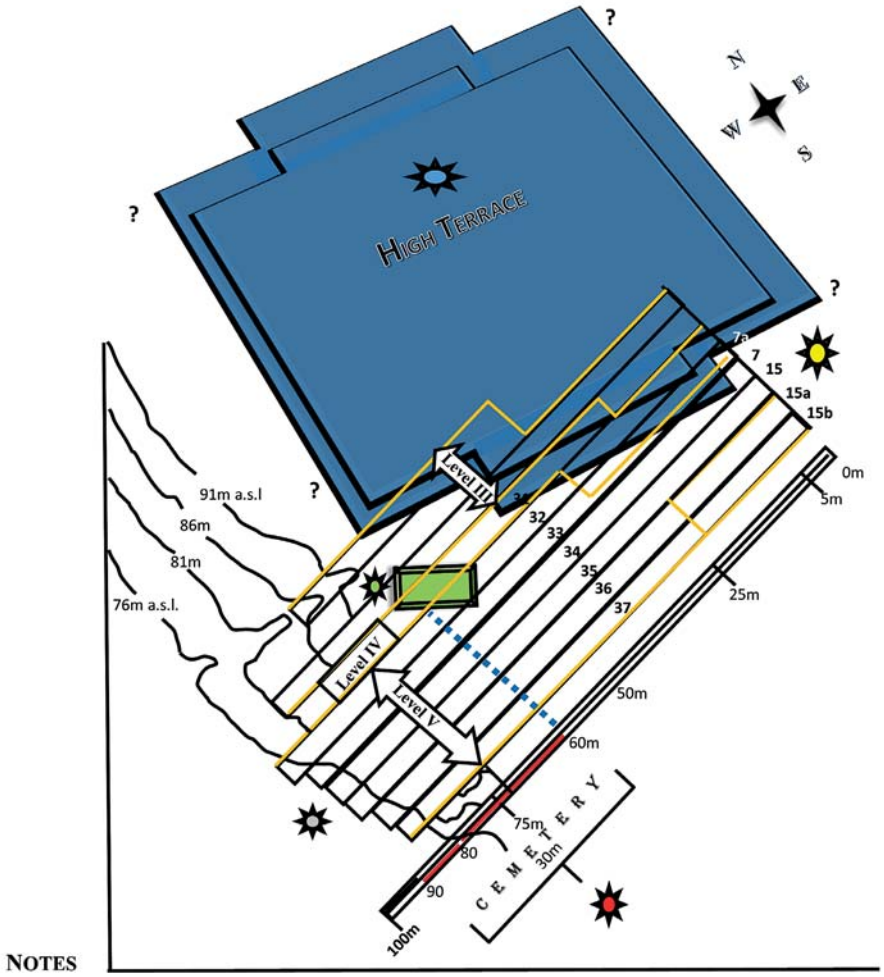


Plate 1. [A] Photograph of the *chantier de la nécropole* by R. de Mecquenem (8 Mars 1914; after Daucé 2011, Mecquenem_photo_suse_1914_002); [B] Susa I pottery kiln (photograph and line drawing after Mecquenem 1934: 205, fig. 42); [C] Line-drawing of a Susa I burial form the cemetery by J. de Morgan (1927, Fig. 65).



NOTES

The system of numbering trenches in J. de Morgan's *Grande Tranchée* as 7, 15 and auxiliary 7a, 7b, 15a, 15b, etc., used between 1897-1899 was abandoned in 1905 (Dyson 1966: 179).

Level V of the *Grande Tranchée* was ca. 11m-10.5m above the river bed (67.5m above sea level).

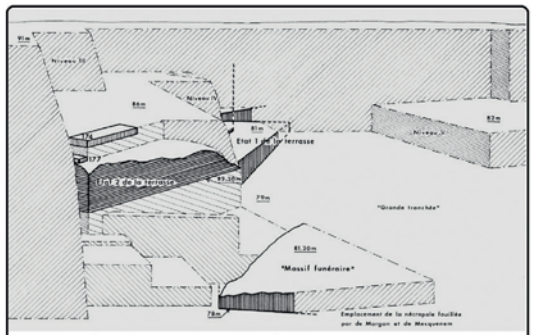
Mudbrick platform "*massif funéraire*" measuring at the base a minimum of 14m (North face) x 7m (West face) x 1.7m (height).

The enormous *Haute Terrace* was a stepped construction built on a 2m high socle made of sundried bricks. It is believed to have reached 8m high with a base of ca. 82 x 90m (reproduction not to scale).

90m-80m approximate length of the *Grande Tranchée* (Lampre 1900: 101; Mecquenem 1928:100); 30m approximate limit of the extension of the cemetery from the western border of the tell (according to J. de Morgan estimations it occupied an area of ca. *750m*^{2}).

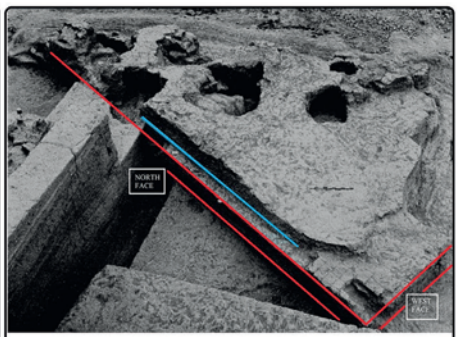
Plate 2. The *Grande Tranchée* of J. de Morgan in 1906 with hypothetical digital reconstruction of the *massif funéraire* and the *haute terrace* (after D. Canal 1978: 15, fig. 2, with modifications by the author; reproduction not to scale).

A. View of the *Haute Terrrace* and *Massif Funéraire* in 2003 (Photograph by the author)

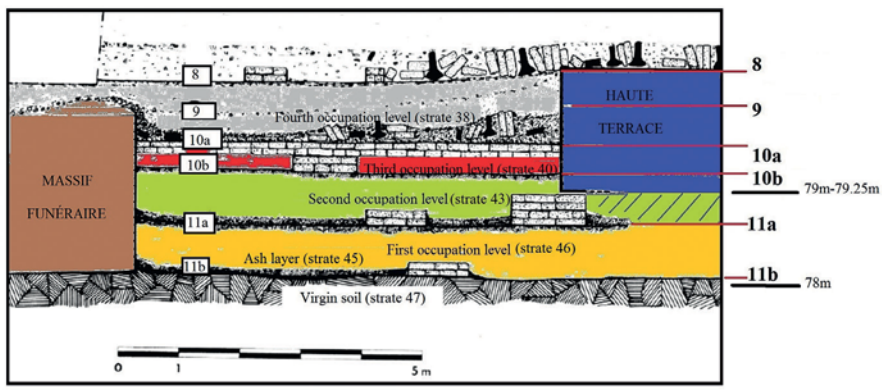


B. Line-drawing representing the 1977 works conducted in the Haute Terrace (After Canal 1978: 20, fig. 7)

C. View of the *Massif Funéraire* in 2003 (Photograph by the author)



D. View of the *Massif Funéraire* showing north and west faces (After Canal 1978: 32, Pl. 7)



E. Stratigraphy of the *Massif Funéraire* and the *Haute Terrace* (After Canal 1978: 28, fig. 7)

Plate 3. Views of the *massif funéraire* and the *haute terrace*.

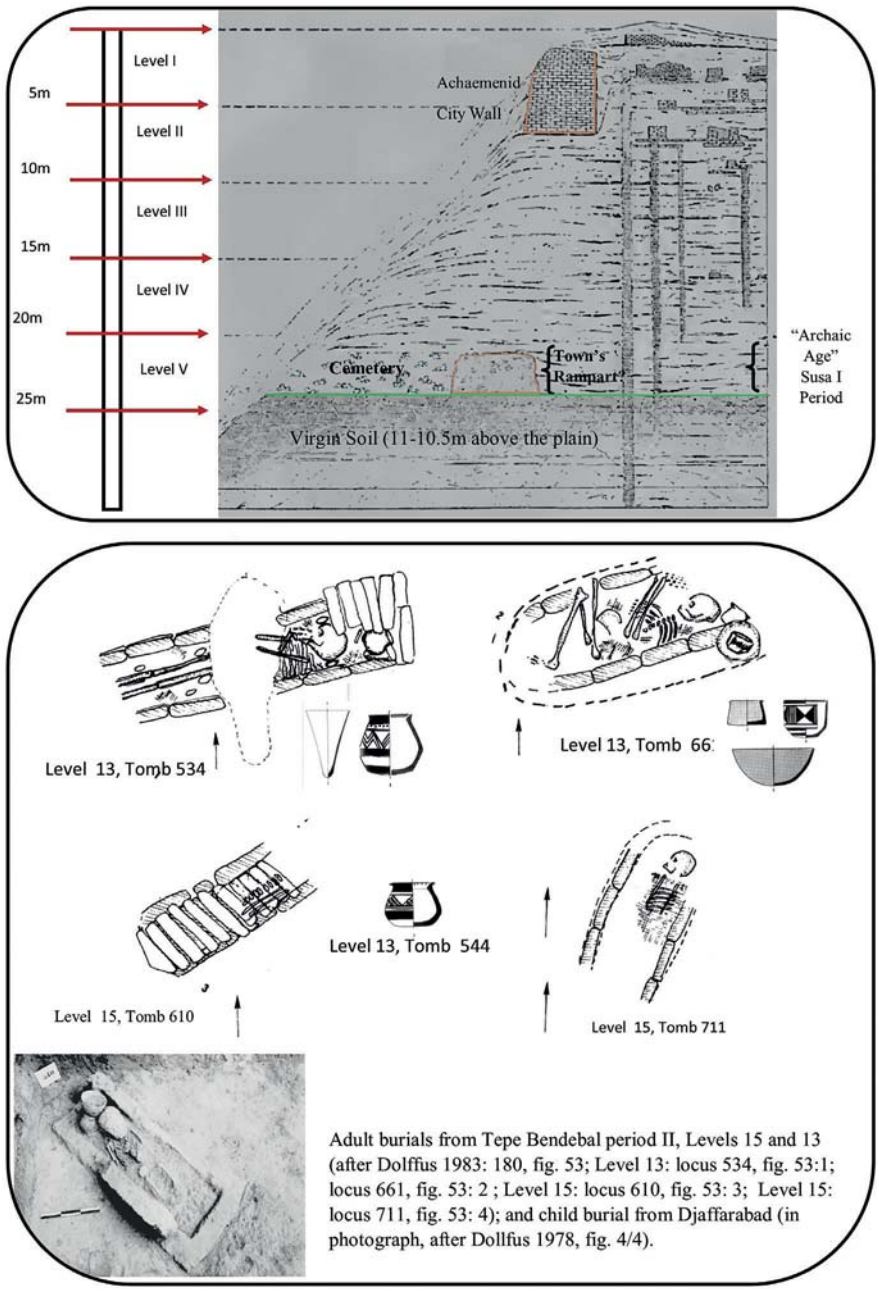


Plate 4. [Above] Stratigraphic cut of the Acropole (after Dieulafoy 1912: 23, fig. 113); [Below] Examples of primary burials of adults and a child from Djaffarabad and Tepe Bendebal.

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THE ELAMITE TRIADS: REFLECTIONS ON THE POSSIBLE CONTINUITIES IN IRANIAN TRADITION

BY

Milad JAHANGIRFAR[1]
(Freie Universität Berlin)

When the two spirits first came together, they created life and death, and how, at the end, the worst existence shall be for the deceitful but the best thinking for the truthful person

(Yasna 30: 4)

Abstract: This paper deals with three major Elamite deities, Napiriša, Kiririša and Inšušinak, who were worshiped in ancient Elam and formed a triad; besides, deities in charge of judging the soul after death will be discussed. The aim is to show that there are considerable similarities between these groups of Elamite gods and Iranian, particularly the Zoroastrian, ones. Since Elam acted like a bridge between the Mesopotamian world and the Iranian plateau, it was influenced by its neighbors; hence it is not surprising if a number of Elamite deities resemble foreign gods and goddesses. Elam was influenced by Mesopotamian beliefs and in turn it influenced the Achaemenid culture. A comparison between the Elamite triad and that of the Achaemenids may reveal more information about the characteristic and roles of some of the Iranian gods.

Keywords: Ancient Elam, Elamite Religion, Elamite Triad, Zoroastrian Triad, Final Judgment.

Introduction

Elam, an ancient Iranian state in the south and southwest of modern Iran, was a neighbor of Mesopotamia and later of the early Persians in highland Fārs. As a result of trade, political treaties and political marriages, and also expansionist policies, one may a priori expect to find similarities between their cultures in general, and between religious beliefs in particular.

[1] I am most indebted to Professor Wouter Henkelman and Professor Farzaneh Goshtasb for their help and support. Needless to say, all errors are my own responsibility.

A very interesting feature of the Elamite religion is a very developed conception of the afterlife. As Vallat (1998: 339) states, death seems to have been an important preoccupation of the Elamites and many of the religious buildings are thought to be connected to the cult of the dead. The stages described in seven tablets from Susa[2] known as "funerary texts" show Inšušinak as the judge of the soul[3], Lagamar and Išme-karab as his two assistants who escort the soul to the judge, and another deity, whose name is unfortunately missing, is said to weigh the soul (Steve & Gasche 1996: 334, 336).[4] Not only these tablets point out the belief in afterlife, but also prayers for members of the royal family bear witness to this. A very intriguing and unique prayer occurs in an inscription of Šilhak-Inšušinak:

IRS 49§39-43

e ^{DIŠ}*Ku-uk-*^{AN}*Kir-ma-áš me-el-ku me-te-ia* ^{AN}*In-su-uš-na-ak ri-el sat-na x x*

"O! Kuk-kirmaš! Deceased[5] prince! May you reach the path[6] of Inšušinak …"

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[2] These texts were found in the excavation of a vaulted baked-brick tomb near the palace of Darius at Susa, on the Apadana, in 1914. Potts (2012: 48) believes that the ideology evoked by these texts was influenced by Babylonian tradition. See also Carter 2011: 46-48; Tavernier 2013: 475-479.

[3] Hinz (1971: 666; 1972: 47) opinioned that Inšušinak "can correctly be viewed as originally a god of the underworld". Tavernier (2013: 471) considers the possibility that Inšušinak "was not the netherworld's lord in all of Elam". In other words, each town may have had its own responsible deity for the netherworld.

[4] From the corpus of Elamite, Sumerian and Akkadian texts we know some 200 Elamite gods (Vallat 1998: 335). Some of them were indigenous to Elam, whereas some others had their roots in Mesopotamia and other neighboring regions. Although some of them were prominent gods and were worshiped in most of the Elamite cities, others were worshiped only locally. Many names in the list are gods whose names are known to us only as components in theophoric names. Moreover, it seems that although certain gods and goddesses were honored throughout the history of Elam, many were worshiped only in certain periods.

[5] EW (918) translates *me-te-ia* as "victorious" while EKI (90) and IRS (112) propose "deceased" for this word.

[6] This interpretation of *ri-el* is not entirely certain; see, e.g., Grillot-Susini 2014: 105, fn. 4.

This short prayer clearly shows that Šilhak-Inšušinak believed in a kind of life in which the soul of the old king, Kuk-kirmaš[7], was still present.

Yet further evidence, which is probably concerned with afterlife, is provided by the funerary clay heads entombed with some people. These funerary objects might have served as portraits of the dead, or portraits of their family members. This possibility may be maintained even despite "the serene and contented facial characteristics" of these models which may suggest "an idealized type" (Alvarez-Mon 2005: 114).

Followers of Zoroaster, too, believe in a life after death. The Zoroastrian picture is much more detailed than the (preserved) Elamite one. Not only in the Avesta, but also in a number of middle Persian works (such as, e.g., *Ardā Virāz Nāmag*), death, punishments and rewards, paradise and hell and the resurrection are described.

It has long been a moot question whether the Achaemenids were Zoroastrian or not. Despite some Zoroastrian characteristics found in the Achaemenid texts and art, doubt has been expressed by scholars about the Achaemenid religion. Boyce (1983), based on the Greek writings, believed that the later Achaemenids were definitely Zoroastrian. She also presumed that Cyrus the Great, too, was "the first Zoroastrian Great King" (Boyce 1983: 427). Shapour Shahbazi (2012: 136) considers Darius and his successors Zoroastrian. The undeniable fact is that Ahura Mazda (in the Old Persian inscriptions 'Auramazdā'), the supreme Zoroastrian god, is invoked in the Achaemenid inscriptions[8] and what "the kings do they do with the favor of Ahura Mazda" (Shapour Shahbazi 2012: 136; for shared basic concepts by both the Avesta and the Old Persian inscriptions see: Skjærvø 2014: 177-179). Besides, Mithra and Anāhitā, two great deities without a position in Zoroaster's hymns, the *Gāthā*s, but worshipped in some hymns belonging to pre-Zoroastrianism, are invoked in a number of Achaemenid inscriptions along with Auramazdā. It is understood that the Achaemenids were generally tolerant of different religions and therefore their religious system may have been composed of various elements, some

[7] This ruler "was the first to call himself *sukkalmah*, but his predecessor Šilhaha was the first ruler to be called *sukkalmah*." (Potts 2015: 149).

[8] For instance, in DB I §5: *vašnā Auramazdāha adam xšāyaθya ami, Auramazdā xšaçam manā frābara*: "by the favor of Auramazdā I am King; upon me Auramazdā bestowed the kingship" (Schmitt 1991: 27, 49; Cf. Skjærvø 2014: 178, who proposes "greatness" for *vašnā*).

of which borrowed from other cultures (for a summary of opinions on the Achaemenid religion, see: Skjærvø 2014).

In both Elamite and Achaemenid beliefs, there are comparable triads. On Elamite side Napiriša, Kiririša and Inšušinak[9] and on the Achaemenid side Auramazdā, Anāhitā and Mithra form the first triad.

Elamite Deities	Achaemenid/Zoroastrian Deities
Napiriša: 'great god' (male)	Auramazdā: 'wise lord' (male)
Kiririša: 'great lady' (female)	Anāhitā: 'damp, strong, untainted' (female)
Inšušinak: 'lord of Susa' (male)	Mithra/Mihr: 'contract/friendship' (male)

Table 1. Deities of the First Triad, the meanings of their names and their gender.

In addition to this triad, in both cultures there is another comparable group the size of which varies. The Elamite team consisted of Inšušinak, Išme-karab, Lagamal and another divinity who weighs the soul[10], while Mihr, Srōš, Rašn[11], Good Wāy, Warhrām, Aštād and Zāmyād constitute the Zoroastrian one. In comparison with the first triads in both cultures, these second triads have more affinities between them.

[9] This triad sometimes appears as Napiriša, Inšušinak, Kiririša. Napir-Asu, Untaš-Napiriša's consort, invokes the titular triad of the empire as well as Beltiya, or "My lady", a title that in Susiana seems to have been reserved for Ištar, the goddess of love and war (RCS 132).

[10] In the *Vision of the Netherworld*, three Elamite deities Iapru, Napiriša and Humban are named as the divine protectors of the soul (Tavernier 2013: 482). It is difficult to judge, however, how much of this conception is genuinely Elamite, and how much derives from Mesopotamian ideas (and syncretism with Mesopotamian gods).

[11] Tavernier (2013: 485) observes that "the development towards a triad of Mithra, Rašnu and Sraoša may possibly be noticed in the confusion seen between this triad and a triad Sraoša-Aši-Nairiiō.saŋha". Indeed, the three latter deities are mentioned together in the *Yasna* 57/3 (see: Kreyenbroek 1985: 37). In this passage, Sraoša is worshipped for his splendor, fortune, strength and victoriousness along with good Aši and Nairiiō.saŋha 'fair of form' (for this triad, see also: Gershevitch 1959: 194).

Elamite Deities	Zoroastrian Deities
Inšušinak: 'lord of Susa' (male)	Mihr: 'contract/friendship' (male)
Išme-karab: 'He heard prayer' (?)	Srōš: 'hearing/obedience' (male)
Lagamal: 'no mercy' (?)[12]	Rašn: 'just, righteousness' (male)
A scale holder	Good Wāy: 'good air' (male)
Anunnaki[13]	Warhrām: 'victory' (male)
	Zamyād/Zāmyād: 'Munificent Earth' (female)
	Aštād: 'rectitude, righteousness' (female)

Table 2. Deities of the Second Group, the meanings of their names and their genders.

The First Triad

The earliest attestation of the Achaemenid triad is found in the inscriptions A^2Ha, A^2Sa and A^2Sd of Artaxerxes II. In these texts, Auramazdā, Anāhitā and Mithra are invoked in a way that suggests the concept of a triad:

A^2Sa§2-3:

vašnā Auramazdā, Anāhitā utā Miθra adam niyastāyam apadānam imam akunaiˆ. Auramazdā, Anāhitā utā Miθra mām pāntu hacā vispā gastā; utā imam taya akunā, mā yāatum[?] mā kayādā xxx

[12] The gender of Išme-karab and Lagamal is still uncertain. Lambert (1980; 1983) is of the opinion that both Išme-karab and Lagamal were male; Vallat (1998: 335) took Išme-karab as a male god, whereas Hinz (1971: 666; 1972: 46-47) believed that both were goddesses. Malbran-Labat (IRS 194), despite the discussions on the gender of Išme-karab, states that the deity in question was probably the consort of the lord of Susa.

[13] Anunnaki (Anuna, Anunnaku) was a Sumerian term for a mass of nameless gods. By the second millennium, Anunnaki referred to the gods of earth and the underworld (McIntosh 2005: 321). Based on the funerary texts from Susa, it seems that the deceased first meets Anunnaki. The presence of Anunnaki in the procession may be viewed as a Mesopotamian element (Cf. Tavernier 2013: 478-479, 481, 483).

> "By the favor of Auramazdā, Anāhitā, and Mithra, I have built this palace. May Auramazdā, Anāhitā, and Mithra protect me from all evil; and that what I have built may neither xxx nor xxx (to destroy)" (after Schmitt 2009: 192).[14]

It is uncertain when exactly this triad was formed before finding its way to the royal inscriptions; it is, however, to be traced to the Indo-Iranian stage when it was constituted by Ahura Mazdā, Apąm Napāt and Mithra, i.e. three male deities who had the epithet "*ahura*" meaning "lord" (Boyce 1986: 148). Later, and probably at the time of Artaxerxes II, Anāhitā replaced Apąm Napāt probably as a result of reformations (Boyce 1986: 150; also Boyce 1982: 219).

The earliest occurrence of the Elamite triad is not known. This circumstance is largely due to lack of datable textual evidence, especially from earlier stages of Elamite history. Inšušinak makes his first appearance in the *Treaty of Narām-Sîn*. This treaty was concluded between *Narām-Sîn* and an Elamite ruler, perhaps the eleventh Awanite ruler Hita (Cameron 1936: 34; EKI 2; Hinz 1967; Hinz 1971: 651-2, 662-3; Reiner 1969: 56-8).

Napiriša and Kiririša are absent from this document. It seems that Napiriša was unknown before 1900 BCE in Susa (Miroschedji 1980: 136), but this may also be due to chance preservation. The first known attestation of his name is in the oath formula on a tablet: "… on the life of Napiriša … on the life of the god". This tablet belongs to the reign of Pala-iššan and Kuku-sanit, i.e. the first half of the 19th century (Miroschedji 1980: 134).

Probably, Kiririša, the female member of the triad, originally hailed from Liyan (modern Bushehr).[15] She had a temple in Liyan as early as the 19th century (Grillot 1986: 176; Miroschedji 1980: 136).[16] In, e.g., several

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[14] This triad was also prominent during the Sassanian period (Boyce 1982: 219).

[15] Šilhak-Inšušinak (IRS 39) relates that Humban-numena had built the temple of Kiririša and that he (Šilhak-Inšušinak) rebuilt it in baked bricks (also see Labat 1963: 405; 1964: 487-488).

[16] The religious system of Elam is quite complicated. In addition to divine couples (such as Simut-Manzat) there seems to have existed more triads, although perhaps confined to certain territories. For instance, Humban-numena invokes Napiriša-Kiririša-Bahahutip (EKI 4C). The triad of Napiriša-Kiririša-Inšušinak may tentatively be recognized as the national one. It is also noteworthy 'that Enzak, the chief god of Dilmun, was one of a triad of deities worshiped on the Susa Acropole in the eighteenth century B.C.' (RCS 120).

texts of Untaš-Napiriša from Chogha Zanbil, the three deities are invoked together, such as EKI 9 III b§IX:

> ha-at ^{AN}GAL ^{AN}In-šu-uš-na-ak a-ak ^{AN}Ki-ri-ri-ša si-i̯a-an-ku-uk-pa ri-uk-ku-ri-ir ta-ak-ni
>
> "may the terror of Napiriša, Inšušnak and Kiririša of *siyankuk* be placed on him" (Cf. Grillot-Susini 1987: 51-52; Henkelman 2008: 329, fn. 767).

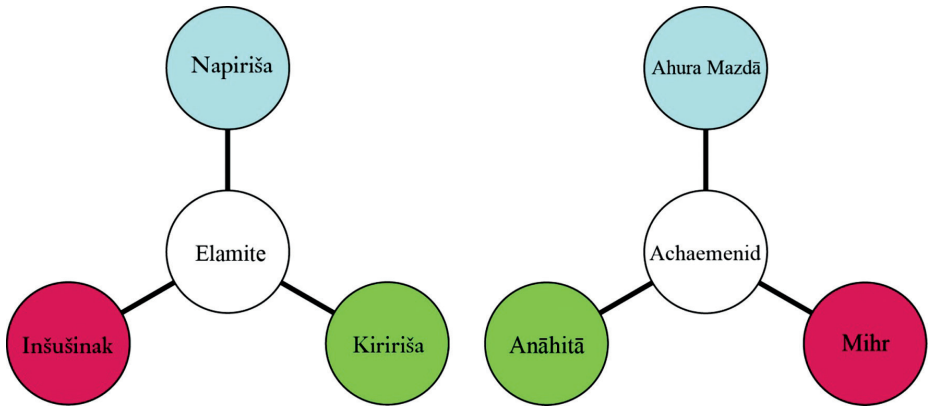
Furthermore, in EKI 47, a long inscription by Šilhak-Inšušinak, the three deities are invoked together five times:

> EKI 47§1:
>
> e ^{AN}GAL te-im-ti ri-ša-ar-ri e ^{AN}Ki-ri-ri-ša za-na ki-iz-zu-um-ra-ri […] e ^{AN}In-su-uš-na-ak te-im-ti ki-iz-zu-um-ú-še
>
> "O Napiriša, great lord! O Kiririša, lady of *kizzum*! […] O Insušnak, lord of *kizzum*! (for *u-še* see: IRS, p. 111).
>
> EKI 47§23:
>
> *e* ^{AN}GAL ^{AN}*Ki-ri-ri-ša* ^{AN}*In-su-uš-na-ak nu-um ú-te-im-ti*
>
> "O Napiriša, Kiririša, Insušnak! You aid me" (Cf. Grillot-Susini 1977: 162).

Thus, the first half of the 19th century is the terminus antequem for the formation of the triad (cf. Grillot-Susini 1986: 177), but it is mentioned more frequently only during the middle Elamite period (Hinz 1971: 665; Koch 1995: 1962).

A male deity was at the head of both triads. Napiriša (great god) and Auramazdā (wise lord) shared a number of characteristics. In Zoroastrian literature, as well as in the Achaemenid inscriptions[17], Auramazdā is the

[17] For instance, in DNa§1: *baga vaz̤rka Auramazdā, haya imām būmĭm adā, ahya avam asmānam adā, haya martiyam adā, haya šiyātim adā martiyahyā*: "the great god (is) Auramazdā, who created this earth, who created that sky, who created man, who created happiness foe the man" (after Schmitt 2009: 100).



creator of the world. In Zoroastrian beliefs, he created the world and man, but he is not the judge of the dead. Napiriša, too, as depicted in a rock relief (see below) is responsible for the waters of life. Based on meager available evidence, Napiriša is not a final judge either. Mihr and Inšušinak were both great judges of the dead; besides, they were gods of "contract". Based on the royal middle Elamite inscriptions, however, one may wonder if Inšušinak was the supreme god of Elam. In fact, as Henkelman (2008: 61) states, "the position of Inšušinak is in some respects very similar to that of Auramazdā." Nevertheless, comparing the triads, there are more affinities between Inšušinak and Mihr than Inšušinak and Auramazdā.[18]

Finally, there are Kiririša and Anāhitā, the goddesses. Kiririša forms the liaison between Napiriša and Inšušinak;[19] Anāhitā did not play the same role, or if she did for any political or social reason, it is not evident from the texts.

It is interesting that in the Avesta there is no reference to this triad. According to the teachings attributed to Zoroaster, Auramazdā is the only

[18] Inšušinak and Napiriša were the great gods of Susa and Anšan respectively (for Napiriša see Miroschedji 1980), but perhaps at the national level, and for the sake of a unifying royal ideology, the two became to be regarded one and the same great god of Elam (as alluded to in some texts, e.g. IRS 27, from Chogha Zanbil).

[19] Although scholars, such as Hinz (1971: 665-666), believed that Kiririša was at the same time the consort of Napiriša and Inšušinak, as a reflection of endogamous relations between the members of the royal family, texts and archaeological evidence from Chogha Zanbil throws some doubt on this theory.

supreme god. In fact, the prophet relegated other gods to lower positions. Notwithstanding, Mithra and Anāhitā regained higher positions during the history of the religion.

The process of creation in Elamite religion is not as clear as what is found in parts of the Avesta and also in some of the middle Persian books, particularly in the *Bundahišn*[20]. In Zoroastrian beliefs, the sole creator is Ahura Mazdā and it is he who rules over the world, although he has to fight against the army of darkness. On the Elamite side, there are only few vague hints about the creation and the identity of creator gods. *Ruhurater*, an "Elamite deity whose name may be tentatively explained as "(the god who is) the creator (of) man" (Henkelman 2007: 449) could be considered such a god. A group of eight deities called the *Napratep* is also understood as the creator-gods (Henkelman 2007: 449). Also, the names *Hu-pan-un-be-iš* and *Hu-pan-un-taš* mean "*Hupan* has created me" and "*Hupan* has established/supported me" (Zadok 1991: 232). The evidence raises the question if there were more than one creator-god in Elam, each hailing from a certain territory, or if each of them was in charge of a certain creature. This complicated problem cannot be discussed in this paper.

Another parallel feature is in regard to the waters of life. Arədvī Surā Anāhitā is known as the goddess of waters. In the Yašt V, devoted to Arədvīsur, she is described as a mighty deity who is as vast as all the waters flowing on the Earth:

> Yt V§3:
>
> mastiąm dūrāt frasrūtąm yā asti avavaiti masō yaθa vīspå imå āpō yå zəmā paiti fratačinti yā amavaiti fratačaiti hukairyāt hača barəzaŋhat aoi zrayō vouru.kašəm
>
> "The large (and) known afar, that is as large as the whole of the waters that run along the earth; that runs powerfully from the height of Hukairya down to the sea of Vouru-Kasha" (Similarly *Yt*. XIII and in the *Ābān Nyāyiš*; see: Darmesteter 1883: 54, 181, 356).

[20] Reichelt (1911: 95) believed that the detailed description of the renovation and the last judgment contained in the Bundahišn was undoubtedly founded on original Avesta sources which are now lost.

Also in the *Greater Bundahišn* (III§17 and XXVI§90), she appears as the father and mother of waters:

> Bundahišn III§17:
>
> "Anāhit, who, as is known, is the Spirit who is the purifier of the Earth possessing the seed of the waters."
>
> Bundahišn XXVI§90:
>
> "All wateriness of Aredvisur is that of Anāhit, mother of the waters."

It is generally believed that the rock relief at Kūrāngūn depicts the divine couple Napiriša and Kiririša.[21] The association of Napiriša with the deep subterranean waters, i.e. the source of life, is clearly depicted here. It is he who, at Kūrāngūn, bestows streams of water upon a ruler and his retinue. The female deity who accompanies him seems to partake in the act and may have a connection with the fertilizing waters as well. At any rate, gods associated with the waters exist in both the Elamite and Achaemenid triads. This may be supported by a passage of Hanni (EKI 76§36) where it is stated that Napiriša, Kiririša and Tepti have let water and earth thrive (also see Henkelman 2008: 328-329; Hinz 1962: 116).

Another noteworthy point, as mentioned above, is the fact that in both beliefs, the supreme gods, Ahura Mazdā and Napiriša, do not judge the soul. In fact, Mihr (Av. Miθra-) and Inšušinak have jurisdiction in giving verdict.

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[21] Different identifications for this couple have been made. Hinz (1971: 673) believed they are Humban and "'great goddess' whether she be called Pinikir or Kiririša." He (1972: 52) does not rule out the possibility that the relief might present Humban and Kiririša or Parti. Miroschedji (1980: 139) argued that the male character is Inšušinak. Grillot and Vallat (1984: 27-29) and Vallat (1998: 338) identify them as Napiriša and Kiririša. Based on an Akkadian text of Temti-Agun, Vallat (1997: 111) has shown that Ea and Enzag were used as epithets of Inšušinak. On the other hand, in the incantation series *Šurpu*, Ea was equated with Napiriša (Potts 2013: 133). Thus, both opinions on identifying the male character at Kūrāngūn with Inšušinak or Napiriša are correct, presumably as result of a progressive identification of Napiriša and Inšušinak. In line with this, Potts argues that the identification of the male deity at Kūrāngūn with Inšušinak, Ea or Napiriša is not in conflict. He also assumes that Inšušinak's role as a netherworld deity is not in evidence at Kūrāngūn (Potts 2004b: 153-154).

The two judges share a number of mutual characteristics. As Mackenzie (1915: 55) put it:

> It is possible that the close resemblances between Mithra and Mitra of the Aryan-speaking peoples of India and the Iranian plateau, and the sun god of the Babylonians — the Semitic Shamash, the Sumerian Utu — were due to early contact and cultural influence through the medium of Elam. As a solar and corn god, the Persian Mithra links with Tammuz, as a sky and atmospheric deity with Anu, and as a god of truth, righteousness, and law with Shamash.

There seems to be a connection between both Mihr and Inšušinak and the Sun. In the *Mihr Yašt* (§13), it is said that Mithra appears just before the sun rises. Gradually, this synchrony developed into the firmly established belief that Mihr was the rays of the sun, i.e. Mihr and the Sun came to be regarded as being of the same nature. In Elam, Inšušinak was not a sun-god himself but associated with the Mesopotamian sun-god Šamaš. Indeed most of the oaths were taken in the name of Šamaš[22] often associated with Inšušinak or Išnikarab (Vallat 1998: 335), the latter being another god associated with death.

Although it is not specific to Mihr and Inšušinak to have high temples or residences, it could be another interesting mutual feature. Mihr, as related in the *Mihr Yašt* (§50), resides on high mountains:

> yaθra nōit xšapa nōit təmå nōit aotō vātō nōit garəmō nōit axtiš pouru.mahrkō nōit āhitišdaēuuo.dāta naēδa dunmąn uzjasənti haraiθiiō paiti bərəzaii
>
> "where there is neither night nor darkness, neither cold nor hot wind, neither deadly illness nor defilement produced by the *daeuuas*, nor do mists rise from lofty Hara." (After Humbach and Ichaporia 1998: 64).

At Chogha Zanbil, on the top of the ziggurat, the *kukunnum* or the "high temple" (EW: s.v. *ku-ku-nu-um*)was dedicated jointly to Inšušinak and Napiriša (Carter 1992:12).[23]

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[22] The Elamite sun-god was *Nahhunte* (see: Stolper 1998).

[23] Although it is considered a triad, one may question the real identity of its both male members. In several texts of Untaš-Napiriša from Chogha Zanbil (e.g. EKI 11), one reads:

Yet perhaps the most striking similarity is to be found in the realm of justice and contract. The name Mihr is understood as "contract" and "agreement" (Bartholomae 1904: 1183) or "friend" (Schmitt 2014: 215. Cf. OP *ha-miçiya-* "rebellious, opponent"). Based on the younger Avesta, he is the personification of truth and faith and the god of the heavenly light. Swift horses are bestowed by Mihr on those who do not lie (Yt 10§3).

As mentioned before, most oaths in Elam were taken in the name of Šamaš and Inšušinak or Išnikarab. Hinz believed that since Inšušinak was originally a god of the underworld he "was the god of oaths for all Elam" (Hinz 1971: 666). Attention, of course, must be paid to the date of the relevant documents; however, a fundamental and radical change in a god's role and duty is not very likely, particularly in a well-established religious system. In some cases, the legal records in Akkadian contain "the assertory oath ^{AN}*Inšušinak lu dārû* "May ^{AN}Inšušinak live forever" (de Graef 2010: 29). Also, it is probable that, at least during a certain period, juridical records were kept at the temple of Inšušinak in Susa (de Graef 2010: 43).

The second group: netherworld tribunal

The members of the Zoroastrian team are Mihr, Rašn, Srōš, Good Wāy, Warhrām, Aštād and Zāmyād (five gods and two goddesses)[24], while Inšušinak, Išme-karab, Lagamal and a scale-holder deity constitute the Elamite one. This "netherworld tribunal" or "committee of death" dealt with the passage to the netherworld and the final judgment. Mihr and

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^{AN}GAL ^{AN}*In-šu-ši-na-ak si-i̯a-an-ku-uk-ra* "Napiriša [and] Inšušinak of [the] siyankuk", while according to Elamite grammar, as is the case in several other texts from the same site, it should have been *si-ia-an-ku-uk-pa*, with the suffix *–p* marking the plural form. Having employed the singular suffix *–r* instead of *–p* suggests that the King is talking about one god (Cf. Roche 1986: 192). König (EKI, p. 57) believed that "Das *Si̯ankuk-ra* für Inšušnak allein, statt des *Si̯ankuk-pa* für beide Götter ist wohl hier (…) nur schlechte Übersetzung von akkadischem *ša Si̯ankuk* "von Si̯ankuk", das sich nicht bloss auf den letzten Gott, sondern stets auf alle vorhergehenden Götter bezieht," but this is scarcely convincing in an Elamophone context. Grillot-Susini (1986: 176, fn. 3; 2014: 105) argues more convincingly that probably due to some political-religious reasons, Inšušinak assumed some attributes of Napiriša; at the same time, the two gods retained their own identity (my thanks are due to Wouter Henkelman who called this evidence to my attention).

[24] Tavernier (2013: 484, 486) believes that "Daēnā", a female divine figure, was associated with the procession toward the judge. He assumes that Iranian Daēnā, who meets the soul on its way to the final destination, plays the same role which Išme-karab and Lagamal play on the Elamite side.

Inšušinak judge the dead while assisted by other deities. It has been proposed that the group Inšušinak, Išme-karab and Lagamal was a precursor of the Zoroastrians group Mihr, Rašn and Srōš (Steve and Gasche 1996: 346-347; Henkelman 2008: 61, fn. 147; Potts 2012: 48; Tavernier 2013: 484-486). While the parallel is important, it should be added that more than three gods are involved on the Zoroastrian side: Mihr, Srōš, Rašn, Aštād, Wāy the Good and Zāmyād[25], all male characters except Zāmyād and Aštād, who are, respectively the patron goddess of the Earth and the goddess of rectitude. Thus, there are seven[26] deities dealing with death and judgment in Zoroastrianism, although they are never mentioned together; at least four deities carry out the task in the Elamite version.

In the *Mēnōg ī Xrad*, another middle Persian text, there is a reference to the Zoroastrian group. In this text (II: 118), it is said that in the morning of the fourth day after death, the soul, accompanied by Srōš, Good Wāy and Warhrām, finds his way to the *Činwad puhl*[27]. On his way, he faces the opposition of some demons, but with 'the mediation of Mihr and Srōš and Rašn' (*ud mayānǰīgīh ī Mihr ud Srōš ud Rašn*),he manages to overcome them and reaches the bridge.

There are connections between all the members, for instance, a joint responsibility of Rašn and Srōš is that the *Ušahin gāh*, the last watch from midnight to dawn, is under their protection (Kreyenbroek 1985: 117).[28]

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[25] According to the Bundahišn XXVI §120, Aštād and Zāmyād put the soul on the scale, so Rašn can weigh it. Rašn, Aštād and Zāmyād are assistants of Amurdād, the guardian of plants and food.

[26] The number seven is a recurring theme in the Zoroastrian tradition and probably not coincidental. According to *Bundahišn* VIII, after Tištar produced the rain wherefrom the seas arose, the land broke into seven pieces, i.e. seven countries were formed; after Gayōmart, i.e. the first man, was slain, seven kinds of metals developed from his body (Bundahišn VI F 8; in the *Selections of Zādsparam* 3 §69 it is said that eight kinds of metals developed from Gayōmart's body). Furthermore, *Amešāspand*s, the "Holy Immortals", are the seven high-ranking deities (see, e.g. Yt. XIII 22 §82-83).It is also noteworthy that in regard to funerals and death rituals, seven kinds of dried fruits and nuts are offered known as *lork* (I am indebted to Farzaneh Goshtasb who kindly provided me with the details regarding the number "seven").

[27] The divider bridge separates the souls of the righteous dead, who cross, from those of the wicked, who fall off (Mackenzie 1986: 22). Note that in the *Bundahišn* (XXVI§50) the soul is said to "reach the *Činwad*-bridge under the protection of Srōš" while "elsewhere, good Wāy and Warhrām are said to accompany Srōš when he takes the soul up to the Bridge" (Kreyenbroek 1985: 133).

[28] According to the *Sirōza*, on the seventh day at the time of the Ušahin gāh, Srōš, Rašn and Aštād are worshipped together.

In a hymn to Srōš, one reads:

> "We worship the body of Sraoša, accompanied by rewards. We worship the body of Rašnu the very just. We worship the body of Mithra of wide cattle-pastures. We worship the body of Vāta the righteous. We worship the body of the good Mazda-worshipping religion" (Kreyenbroek 1985: 69)

In the *Ardāvirāz Nāmag* (V§3; also *Mēnōg ī Xrad* II§119; *Bundahišn*XXVI§120) Rašn is said to be holding a scale with which he weighs the deeds of the dead. On the Elamite side, the name of the scale holder is missing. Indeed, after Išme-karab and Lagamal have guided the dead to the presence of the judge, i.e. Inšušinak, the latter declares the verdict before the scale holder (Steve and Gasche 1996: 334). So far, based on the meager available texts, four Elamite gods can be assumed connected to the world of the dead. But if it is accepted that all deities in possession of a *siyan husame* were connected to a funeral and death, then it will be concluded that the number of the underworld gods exceeded four; however, more underworld gods would not mean they necessarily were part of the judgment committee. Some of the Elamite gods, such as Kiririša, Inšušinak, Lagamal and Išme-karab, possessed a monumental gate which might be a symbolic passage to the world of the dead (Grillot-Susini 1986: 178-179); if this is true, then not only the number of the engaged gods increase, but also we can find goddesses, such as Kiririša, in the death squad. Henkelman (2008: 443), however, believes that owning a gate and a *siyan husame* does not necessarily mean that these gods were connected "to a funerary or 'chthonic' realm" (also see Tavernier 2013: 474).

In the Zoroastrian calendar, each day of the month is connected to a certain deity. It is noteworthy that the 16th, 17th and 18th days are respectively under Mihr, Srōš and Rašn, while the 20th day is for Warhrām, 22nd for Good Wāy, 26th for Aštād and 28thfor Zāmyād (Bundahišn I,a§23; for the days also see the *Sirōza*).Our knowledge of the Elamite calendar is quite limited. It seems that Elamites used a luni-solar calendar probably with internal subdivisions by periods and areas (Basello 2002: 15). It is quite certain that in the Elamite calendars there were festivals in honor of both local and national gods, but it remains unknown what gods enjoyed a day in the calendars and in what order they would be venerated (for Elamite

calendars also see Cohen 1993: 362-376).We know from the Akkadian stela of Tepti-ahar excavated in Haft Tepe, that the four-day *Tašrītu*-festival was held in honor of Inšušinak (Reiner 1973: 91). Similar festivals could be assumed for other gods, particularly for those with more significant status.

In Iranian beliefs, the title *ahura*, meaning "lord", is accorded to Ahura Mazdā, Mithra and Apąm Napāt. The latter deity's position "is in many respects perplexing" (Boyce 1975: 41). Despite the title *ahura*, there is no hymn dedicated to him; however, in the division of the day, the morning is under Mithra whereas the afternoon is under the protection of Apąm Napāt (Boyce 1975: 41; 1986: 148).[29] Once probably being a major deity, Apąm Napāt lost his significant position over the time. Yet, based on the title *ahura*, it could be inferred that these three gods formed a triad and probably at the time of the Achaemenid she was replaced by Anāhitā, i.e. a goddess. Therefore, the triad changed from having three gods to having two gods and one goddess.[30]

The Achaemenids, it seems, continued and adapted some older beliefs and rites. Having been exposed to various influences, the Persians had a religion a mélange of different thoughts and doctrines. It is quite probable that the Elamite beliefs were adapted by early Persians a few centuries before the Achaemenid empire was founded, at a time when Persians lived side by side with Elamites.[31] Bearing in mind that we owe most of our knowledge of the death in Zoroastrian beliefs to the middle Persian works, which were compiled much later, adaptation and addenda to these writings are within the realms of possibility.

Not only in Zoroastrianism, but also in Manichaeism we find a group of three angels who approach the souls of the deceased and lead them on their

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[29] Boyce (1986: 149) assumed that the compound name 'Mithra *baga*' indeed refers to two deities: Mithra and *baga*, the latter being an epithet for Varuna in India, or Apąm Napāt in Iran. This assumption, however, might be unlikely, since in the Old Persian inscription *baga*, meaning "god", may be a title for Mithra (also see Henkelman 2008: 250). It is noteworthy that Auramazdā, too, is a *baga* in the Old Persian inscriptions (*baga vazarka Auramazdā*).

[30] According to Plutarch (*Art*. 27.4) "Female cultic personnel in Anāhitā sanctuaries are attested for the Achaemenid period" (Henkelman 2011: 148). Also, it is probable that the Sasanian Anāhitā sanctuary at the spring of Bīsotūn, "may continue an Achaemenid or older place of cult" (Henkelman 2008: 378).

[31] Henkelman (2008: 61) proposes that the idea of a final judgement was transmitted to Persian culture in the Neo-Elamite or Achaemenid period.

way to paradise (Sundermann 2002).[32] After a righteous person dies, the Primordial Man sends forth "a divinity named the Just Judge as a guide, along with three angels who carry a jar of water, a set of garments and a light diadem, respectively. A young figure similar to the righteous one accompanies them." The demons approach the soul but the Just Judge and the three angels drive them back and help the soul to reach his destination (Esmailpour 2005: 78-79). This scene is similar to what is described in the *Mēnōg ī Xrad* (see above).Here, there is a group consisting of five members, including the Just Judge (*dādwar īdādgar*) who judges human souls after death (Esmailpour 2005: 51). But, there is another Manichean judge, the King of Honor (*pāhragbed*), who judges the demons and other creature of darkness (Esmailpour 2005: 66).

Conclusion

The Iranians were influenced by Elamite beliefs and later seem to have incorporated some of these in Zoroastrian religious systems, as they did with elements of yet different origin. It seems that the Elamite beliefs, through Zoroastrianism, continued even in other faiths. Scholars have proposed that the triad Inšušinak, Išme-karab and Lagamal was a precursor of the Mazdean triad consisting of Mihr, Rašn and Srōš.[33]But, indeed, the number of these groups of deities exceeds three. The scene of escorting the soul after death by the gods, guiding him to the great judge and weighing his deeds is quite similar in both cultures, despite the difference in numbers of the gods. We are not sure exactly in what ways this sort of influences was exerted.

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[32] Manichean beliefs must be dealt with caution, as they were an amalgam of teachings of several cults and religions. Note also that in Islam, at the first night after death the souls are met by two angels, who ask him about his deeds during his life. This is considered to be the first stage of the final judgment. Then the soul will wait to be judged by the supreme god. It raises the question that from what culture this belief has been borrowed. Since this kind of judgment and weighing deeds were peculiar to Elam, Israel and Egypt (Steve and Gasche 1996: 345).

[33] For Tavernier (2013: 487), it is more probable that the similarities discussed here are just coincidence, not the influence of one culture on the other one.

Abbreviations

EKI: König, Friedrich Wilhelm, 1977. *Die elamischen Königsinschriften*. AfO Beiheft 16, Osnabrück, Biblio Verlag.
EW: Hinz, Walther & Koch, Heidemarie, 1987. *Elamisches Wörterbuch*. Ergänzungsband 17. Berlin: Dietrich Reimer.
IRS: Malbran-Labat, Florence, 1995. *Les inscriptions royales de Suse. Briques de l'époque paléoélamite à l'Empire néo-élamite*. Paris: Éditions de la Réunion des musées Nationaux.
RCS: Harper Prudence O., Aruz Joan & Tallon Françoise (eds.), 1992. *The Royal City of Susa. Ancient Near Eastern Treasures in the Louvre*. New York: The Metropolitan Museum of Art.
Yt: Yašt

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VESSELS OF NOTE: THE BRONZE "INKWELLS" OF LURISTAN AND ELAM

BY

Yasmina WICKS
(The University of Sydney)

Abstract: A series of distinctive squat bronze vessels best known under the pseudonym "inkwell" have made well-noted appearances in Iron Age III burials in Luristan and are becoming increasingly familiar from Neo-Elamite funerary contexts. The present work brings together all of the published "inkwells" recovered during archaeological excavations in Iran, as well as a small number from Mesopotamia and far beyond in the Aegean, and arranges them into a new typology based on variations observed in the details of their form. The possible function of each "inkwell" type and the role it may have played in its funerary context is then considered, followed by some suggestions as to the broader significance of the corpus.

Keywords: Inkwells, Luristan, Elam, funerary practices, bronze, metalwork.

Introduction

One of the most characteristic and well-dated objects of the Luristan Iron Age III (ca. 800/750-650 B.C.E.) and Neo-Elamite II (ca. 725-520 B.C.E.) is the distinctive squat bronze vessel dubbed the "inkwell" by archaeologist L. Vanden Berghe, who encountered several of them during his archaeological explorations in Luristan.[1] Most of the inkwells obtained through controlled excavation come from sites in Luristan and in the foothill and lowland areas of Elam where they occur almost exclusively in funerary deposits. An additional handful of excavated examples can be cited from outside these areas at Sanandaj in Iranian Kurdistan, Uruk in southern Mesopotamia and much further afield on the island of Samos in the Aegean.[2]

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[1] Referred to alternatively as "ink pots" (e.g. Haerinck & Overlaet 1999: 61).

[2] A number of unprovenanced inkwells have also been attributed to Iran, but these will not be treated here. For these see e.g. Calmeyer 1969: 115-16; Moorey 1974: 264-66, fig. 22, nos. 503 and 504; Muscarella 1988: 261, with refs; 2000: 407.

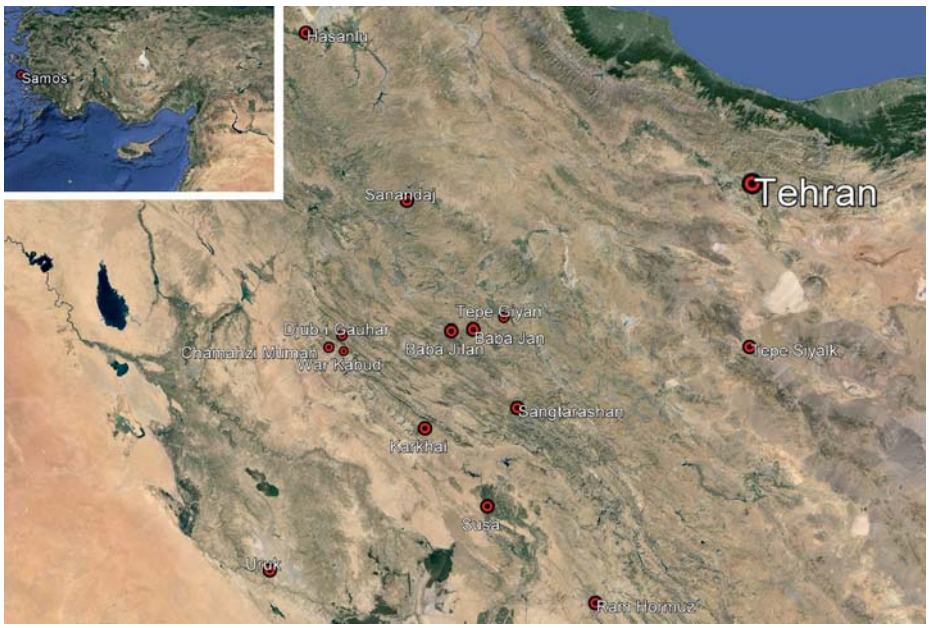

Fig. 1. Map showing locations mentioned in text (Google Earth, 2016).

In spite of the overall resemblances that have encouraged archaeologists to group these small bronze sheet-metal vessels under the rubric of "inkwell", it is difficult to characterise the form in any strict way because the details of the individual examples are not entirely uniform. They range between 7-12cm in height and 8-14cm in diameter. Some have a splayed mouth, others a more sharply everted rim. The neck varies from tall, narrow and concave to short, broad and straight, and the shoulder is broad and inclined. A central constriction divides the body into two segments, the lower of which is often shorter and broader than the top, and the body contours can be angular, softer and curved, or sometimes a combination of both. The base is either flat or takes the form of concentric rings stepping down towards a central circle.

In the present study, the vessels belonging to this rather diverse category are reviewed by region and their possible roles within the funerary assemblages are considered in light of both their form and specific depositional contexts. In the process of this examination a number of both differences and similarities among the various elements of the vessels emerge, allowing for the delineation of six sub-types; some of which

occur only at a single site and others more broadly at a number of sites (for details of each inkwell see Appendix 1). Finally, the scope of the study extends to an examination of manufacture methods and the possible origins of these rather enigmatic vessels.

Luristan Inkwells

A total of fourteen bronze vessels classified as "inkwells" have been published among the large quantities of metal items recovered from the Pusht-i Kuh cemeteries of War Kabud, Chamahzi Mumah and Djub-i Gauhar, and an isolated burial at Karkhai near Abdanan. All being found in burials of the Iron Age III, they are considered by E. Haerinck and B. Overlaet (2004: 61) as "probably very characteristic" of this period. Their appearance coincides with a trend towards the deposition in graves of significantly greater quantities of bronze vessels than seen in the Iron Age I-II, probably reflecting a general increase in wealth (Overlaet 2005: 15). All of the inkwells at these sites were detected in primary individual adult interments, most of which appear to have been male. Although in the near-absence of skeletal remains, attribution of sex must rely on assumptions about gendered grave goods equating weaponry with males and, conversely, the absence of weaponry and the wearing of anklets with females (e.g. Haerinck & Overlaet 1998: 5; 2004: 9).[3]

War Kabud produced the most inkwells of any Iron Age III cemetery, with a total of seven. Yet as a ratio of excavated graves — 200 in total — this number is relatively low.[4] Four were recovered from cist graves (A10, B181, B186, B193), one from a pit with boulders and 2 slabs (A140), and the remaining two were from undefined burial types (B151, B156). Only two of these graves, A10 and A140, were recorded in line drawings (Haerinck & Overlaet 2004: Pls. 8 and 55). In A10 the inkwell was found with a quiver at chest level in front of the flexed arms of the interred individual, presumably a male. In A140 it was at the feet of the deceased — probably a female — placed over the mouth of a jug. The assemblages of

[3] As Overlaet (2005: 3) observed: "well preserved skeletal remains are exceptional in the Pusht-i Kuh".

[4] Bearing in mind, however, that five of the seven inkwells were excavated from the plundered, and presumably richest, area of the graveyard (Haerinck & Overlaet 2004: 61), we can probably expect that there had once been many more.

the remaining five burials with inkwells are not shown in situ, but their contents suggest that three were male (B151, B181 and B193) and one female (B186), while the fifth was not accompanied by any grave goods that might help establish the sex of the interred (see Haerinck & Overlaet 2004: Pls. 59, 64, 66 and 68).[5]

The cemetery of Chamahzi Mumah yielded a further five inkwells.[6] All were in cist graves (T.15, 53-55, 64) and, if we are to judge by the presence of weaponry, all were male interments (Haerinck & Overlaet 1998: figs. 19, 48-51, 56-57, Pls. 18a, 26-27). Fortuitously, the location of the preserved goods in these five graves was recorded by the excavators and from the line drawings and in situ photographs it can be established that the inkwells were placed invariably over the mouth of a jug or directly beside it. In one instance (T.53) the inkwell was clustered, perhaps near the feet of the deceased, together with a bronze bowl, a bronze strainer, and a jug covered by a second bronze bowl.

A thirteenth inkwell was interred in a cist grave (T.39) of a probable female in the Djub-i Gauhar cemetery. The line drawing in the excavation report shows that it had been placed over the mouth of a jug deposited in front of the individual's lower leg (Haerinck & Overlaet 1999: Pls. 26-27). A second vessel, resting in a bowl atop a jug in a male cist grave (T.40), was also described by the excavators as an inkpot (Haerinck & Overlaet 1999: 30-31, Pls. 27-28, 78b; object 40-9). Yet at just 6.3cm high it is shorter than the other Pusht-i Kuh inkwells (7.1-10cm in height) and has a much broader neck (Haerinck & Overlaet 1999: Pl. 28, 78b). Overall this vessel has a more bowl-like appearance and is not considered here as belonging to the inkwell corpus.

Completing the Pusht-i Kuh group of fourteen is a vessel found in an isolated pit burial at Karkhai near Abdanan (Vanden Berghe 1973: 25-29). Here a female was interred on her right side, legs semi-flexed and arms flexed with hands near her face. The inkwell lay in a bronze bowl close to the hands and a baked clay jug was placed down near the feet. The

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[5] At War Kabud it has been observed that a higher proportion of all bronze vessels were deposited in male graves (Haerinck & Overlaet 2004: 57); the inkwells evidently agree with this pattern.

[6] It is also worth noting two fine greyish black ware vessels from Chamahzi Mumah with constricted body, well-defined shoulder, concave neck and splayed mouth, which look to be imitations of the inkwell style (Haerinck & Overlaet 1998: fig. 25, nos. 19-2 and 20-1, Pl. 47b).

presence in this grave of a necklace with carnelian beads, silver rings, two iron pins with bitumen heads covered in silver sheet, two bronze vessels and a glazed pyxis highlights the elite status of this woman. Furthermore, the pins and pyxis can be linked with ca. 725-520 B.C.E. Elamite material culture (see Miroschedji 1990: 185; Álvarez-Mon 2010: 254-55, with refs) and may point to the Elamite identity of this woman or at least her close contact with Elam.

Two more inkwells have been discovered at sites further to the east. One is a recent find from the Baba Jilan graveyard in the Pish-i Kuh (BJ 1; Pl. 1i). A line drawing of this vessel is included in the preliminary excavation report for the site, but no details of the burial or any other grave goods in the assemblage are provided. This would seem to suggest that it was among the items retrieved from the rubble left by looters at the site (Hasanpur et al. 2015: 179, 180-81). The second inkwell was found in a grave at Tepe Giyan (Tomb 16), deposited near the head of the individual with a jug, a small jar and a bowl. The only documentation of this vessel (TG 16-4) is a rather rough illustration (Contenau & Ghirshman 1935: 20, Pl. 11; Overlaet 2003: 52).

The poor preservation of skeletons in the Pusht-i Kuh graves largely prevents reconstructions of vessel placement in relation to the body, but wherever line drawings and photographs showing the assemblages in situ are available, certain inferences can be made about the function of the inkwells from the groupings of grave goods in the empty cists. Firstly, it can be stated that no more than one inkwell was ever found in a single assemblage, and that with it was always included a larger jug (with or without handles and spout) for holding and pouring some kind of liquid. In the documented interments the inkwell was most often placed over the mouth of this jug (WK A140-9, CH 15-3, CH 54-3, CH 55-3, DG 39-6 and DG 40-9), but could also be found next to it (CH 53-6, CH 64-3). Only in two cases (WK A10 and the Karkhai burial) were the inkwell and jug clearly separated.[7] If a consistent close physical association of vessel types in graves allows us to infer a functional relationship between them, we could assume that whatever the liquid contained in the jug, it was to be transferred to the small metal inkwells. It may then have been served as a

[7] The precise location of the Tepe Giyan vessels is not indicated in the excavation report, but both an inkwell and jug were deposited somewhere near the head (Contenau & Ghirshman 1935: 20) and may therefore have been in proximity to each other.

portion of drink to the deceased or poured as a ritual libation upon the interment of the body.[8]

By looking at vessel patterning in the remaining graves it becomes evident that whatever the role the inkwell played in the grave assemblage, it was one usually filled by a bowl, or occasionally a deeper vessel like a cup. At War Kabud over two thirds (12 of 17) of the documented burials contained a jug covered at the mouth by a bowl. In one of the five instances where the bowl was absent its position atop the jug was instead occupied by an inkwell (WK A140). In the four undocumented assemblages containing an inkwell but no bowl (WK B155, B181, B186 and B193) it is likewise possible that the inkwell had been placed atop the jug. This pattern is much more compelling at Chumahzi Muhmar where the majority (23 of 33) of documented burials contained a jug covered by a bowl and in four of the ten cases where the bowl was absent, an inkwell was placed atop the jug instead. The fifth inkwell from this site was deposited with two bronze bowls, a bronze strainer and a jug, which seem to comprise some kind of drinking set. At Djub-i Gauhar the majority (12 of 19) of recorded burials again show a bowl (or cup) atop the jug and in one of the remaining seven (DJ 39) the sole inkwell from this site took its place. The sum of this evidence suggests that in these cemeteries the inkwells were deposited with the deceased as drinking vessels in place of a bowl, since usually only one or other is included. The presence of a strainer with the vessel group in Chamahzi Mumah burial CH 53 could indicate that wine, which required filtration, was the product dispensed from the jar into the serving vessel(s).

When the Luristan inkwells are placed side-by-side it becomes clear that no two are exactly the same.[9] It is possible, however, to distinguish three reasonably distinct types. The first has a long, narrowed, concave neck, splayed mouth, flat base and tends to have rounded contours, though the shoulder angle is sometimes sharper. The lower segment of the body below the constriction is usually distended. Vessels WK A140-9, WK B151-7,

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[8] For the incorporation of libations into funerary ritual (in Mesopotamia) and the need to expand the study of vessels in graves to account for their possible use in ritual performance, see I. Winter (1999).

[9] Note, however, that the descriptions and comparisons made here are heavily reliant on line drawings, which are of course interpretations in themselves. Where available, photographs have been used to clarify certain details, but these too come with inherent problems of distortion resulting from lighting and camera angles.

WK B156-3, WK B186-6, CM 53-6, CM 64-3, DG 39-6 and BJ 1 fall into this group (Pl. 1a-i), though the latter two are distinguished from all others by moulded ridges at the base of the neck. The second type, represented by WK A10-6, WK B181-3, WK B193-4, CM 15-3 and CM 54-3, is characterised by a shorter, broader and straighter neck, an everted rim, angular contours and a base comprised of concentric rings stepping down towards a central circle (Pl. 2a-f). Vessel CM55-3 combines features of both, having a stepped base like type 2 but otherwise consistent with type 1 (Pl. 2g). The third type is distinguished by a very tall, broad, straight neck, narrow everted rim and rather rounded contours, and is so far represented only at Karkhai (KK1) (Pl. 2h). The Tepe Giyan vessel TG 16-4 is illustrated with a narrowed neck and probably splayed mouth, suggesting it may be consistent with type 1. It lacks the usual body constriction, but this is presumably just an inaccuracy in the drawing (Pl. 2i). There is no suggestion of any functional divergence between the three inkwell types outlined above and nor can any obvious correspondences be observed between factors such as sex or burial type. The development of three slightly different forms is, however, of interest and might perhaps be explained by chronological change or production of the vessels in different workshops.

While the inkwell is clearly an Iron Age III phenomenon in Luristan, a possible predecessor can be found in a slightly earlier type of bronze jar with a longer neck and plainer, pear-like profile. This jar lacks both the constriction around the body and the defined shoulder, which is instead marked by a thick, raised, rope-like band. An example of this type was recently uncovered at Sangtarashan, a site of possible ceremonial significance 30km southeast of Khorramabad (Pl. 2j).[10] Here archaeologists detected only a single layer of archaeological material containing large "hoards" of Iron Age IIA and IIB bronze objects underneath and amongst accumulations of stones and soil (Oudbashi et al. 2013: 152; for a recent study of the materials from this site see Malekzadeh et al. 2017).[11] The well-dated context indicates that these jars slightly preceded the inkwells of the Iron Age III and may even have been supplanted by them, since as far

[10] My sincerest thanks to Zahra Hashemi and Prof. Ernie Haerinck for providing me with a copy the 2017 *Iranica Antiqua* article on the Sangtarashan material in advance of its publication.

[11] It is not clear whether the stones represent architectural remains or fencing, or were placed specifically as a covering for the objects deposited there (Oudbashi et al. 2013: 152).

as I can ascertain none have been found in the Iron Age III cemeteries.[12] Two other vessels vaguely reminiscent of the inkwells were found in this collection of bronzes. One has a body constriction (Pl. 2k), but like the Djub-i Gauhar vessel no. 40-9 (Pl. 2l) it is very short (ca. 6cm) and its neck is not sufficiently tall or defined enough to be considered here as a true inkwell;[13] the second is a fairly simple squat vessel with a broad neck (Pl. 2m) deposited together with a long-spouted bronze vessel (Oudbashi et al. 2013: fig. 5). This same vessel combination was found in burial T4 at Tepe Guran (Thrane 2001: 95, 98, 114, Pl. 65.2) where H. Thrane (2001: 115, 65, 16) proposed that the spouted jar could have been used for pouring wine; presumably into the associated "squat beaker".[14]

Susa Inkwells

Contemporary Neo-Elamite II burials at Susa also occasionally yielded inkwells. In 1926 at least four (SVR 1-SVR 4) were unearthed in the Ville Royale by R. de Mecquenem and photographed for his annual excavation report to the French government (Pl. 3a) (two were also later published as line drawings in Mecquenem 1943: figs 42.2 and 42.6).[15] An inventory of objects shipped to the Louvre the same year confirms that all of the bronze vessels had come from "*tombeaux*" and the report further clarifies that some or all had been detected in "*tombes préachéménides à grandes jarres*" and in a vault containing at least seven richly-equipped interments and typical Neo-Elamite II polychrome glazed vessels and pointed-base amphorae (see Mecquenem 1926: 6-7). More precise contexts or indications of relationships with other grave goods were not offered to allow for comparison with the Luristan assemblages. Only in one archived photograph labelled "*tombe préachaeménide*" (Mecquenem 1926: Pl. 12) can a probable inkwell be seen in situ next to a large amphora (Pl. 3b).

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[12] Malekzadeh et al. (2017: Pl. 31, no. 271; table 1) in fact take the date range for the Sangtarashan vessel as far back as the Iron Age IA (1300-1150 BCE).

[13] Malekzadeh et al. (2017: Pl. 34, no. 380, table 1) date this vessel to the Iron Age III.

[14] Another was found in tomb Ax1 of Khatunban graveyard in the Pusht-i Kuh (Overlaet 2003: 45-46). These bronze beakers in turn bear resemblances to certain S-shaped bowl forms of the earlier Iron Age (probably Iron IA); most notably examples from Kutal-i Gulgul (Overlaet 2003: 130-31, 02:19-22).

[15] Mecqeunem's annual reports, photographs and shipping inventory lists for excavations between 1912 and 1939 are available online at http://www.mom.fr/mecquenem/.

Two of these Susa inkwells (SVR1 and SVR2) are comparable with the second type defined for Luristan, having everted rims, short, straight necks and fairly angular bodies, though their bases cannot be clearly discerned in the photographs. With rounder edges and a longer, narrower neck the third (SVR 3) is more along the lines of the first Luristan type, though its rounded body with two equal segments is also quite comparable with the third. The fourth (SVR 4) has a long, narrow neck and its upper body appears to be significantly smaller than the lower, distended segment. Though difficult to distinguish clearly in the photograph, it in fact seems to bear similarities to the earlier pear-shaped, rope-band version described above.

These are the only inkwells shown clearly enough in Mecquenem's archived photographs to permit description, but it seems that others were unearthed in 1922 and 1929. Amongst the records of material excavated in 1922 to the east of Darius' palace in the Ville Royale is a photograph labelled "*mobilier en bronze d'une tombe L*" where probable fragmentary inkwells can be seen sitting in a larger bronze vessel (Pl. 3c). Another image taken in 1929 of bronze vessels from burials in the Ville Royale (Sondage 2, west side) shows two jars of the older rope-band style resting in a bowl together with a further two whose shape cannot be clearly distinguished (Pl. 3d). Mecquenem (1929: 5, Pl. 8) attributed these vessels to the Achaemenid period, but clearly they belong to the preceding Neo-Elamite period.

An unpublished female pit burial (T.27) recovered many years later by R. Ghirshman in his Ville Royale Chantier A is said to have contained a rather rich collection of grave goods dating to the Neo-Elamite II period (Miroschedji 1990: 183-84).[16] Among them is a bronze inkwell (SVR T.27) — "*vase à panse étranglée*"- but no further information is available regarding this vessel. In 1977, P. de Miroschedji detected another inkwell (SVR 693) (Pl. 3e) inside a tomb chamber (T.693) in the Ville Royale II, level 7B, which housed interments of 4 adults and 2 children. It was deposited together with a bronze chalice, perhaps used in conjunction with it, and an iron blade (Miroschedji 1981: 24-7, Pl. IX,6). The presence of the weapon among this group of grave goods suggests that like most of those from Luristan, the inkwell had probably been interred with a male. With its stepped base, relatively angular body contours, straight neck and everted rim, this vessel finds its closest analogies among the type 2 group.

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[16] The assessment of the individual's sex is based on Miroschedji's (1990: 187) assertion that the type of clothing pins found in the grave were female costume accessories.

Ram Hormuz Inkwells

In 2007 the chance discovery of a tomb chamber during earthworks on the Ala riverbank near Jubaji village, ca. 7km from Ram Hormuz, brought forth another eight completely preserved inkwell vessels and a further two converted into "teapots" by the addition of a handle and spout (Shishegar 2015: 334-343). Several more damaged and fragmentary examples of both versions were also found. According to its excavator A. Shishegar, the early-mid 6th century tomb housed two female interments in bronze "bath-tub" coffins (Shishegar 2015: 14, English summary).[17] Many of the grave goods were removed from their original depositional contexts by the machinery and looters prior to the rescue excavation (Alizadeh 2014: 241), but at least some of the inkwells remained in situ amongst a pile of metal vessels including bowls, chalices and "frying pans" against the north wall of the chamber between the two coffins. Two of these had been placed over the mouths of bronze chalices (Shishegar 2015: 282, 499-498). The large number of inkwells found with just two interments and their deposition outside of the coffins rather than in direct association with the corpse stands in contrast to Luristan, where only one inkwell was provided per person and always close to the body. Their quantity and location might perhaps result from the use of the inkwells by numerous participants in the funerary rituals upon one or both interments or, alternatively, their accumulation over time through more regular funerary offerings.[18]

Two of the incomplete inkwells, one bronze (RH 1) and one silver (RH 2),[19] are missing only their upper neck and mouth portion. Both have a narrowed neck, angled shoulder and a body comprised of multiple segments increasing in width towards a stepped, ringed base (Pl. 4a-b). Since they have more than two body segments, they are considered here as a

[17] The discovery of several daggers in this tomb raises a question mark over the use of weapon presence/absence to determine sex. Yet the only blade with a clear find-spot was deposited outside the coffins with some metal vessels and *not* in direct association with either body (Shishegar 2015: 385). Rather than being deposited as a "grave good" it could therefore represent residue of ritual activity in the tomb.

[18] For a summary of evidence for the provisioning of food for the dead in Elam, see Y. Wicks (2015: 93-94).

[19] Although this vessel has a silver appearance, without proper analysis the material cannot be confirmed. Base metals are known to have been alloyed in antiquity to produce a silver-like material and in the 7th century this practice is specifically referred to in a text from the library of Ashurbanipal (668-627) (Moorey 1994: 233).

distinct fourth type. A precise context is not given in the excavation report for either of these two vessels, but a similar function to the Luristan vessels could be considered given the general similarities in form.

In the eight examples that remain in their complete state (RH 3-10), a fifth type can be recognised (Pl. 4c; another two examples of this type are preserved only up to the neck, see Shishegar 2015: 338, nos. 6/9 and 6/10). On the whole these are slightly larger than those from Luristan and Susa, measuring 10.6-12.1cm high and 12.2-14cm in diameter. Also unlike the other quite varied examples, all eight exhibit a high degree of uniformity, having a flat base, bulging lower body segment, angled shoulder, a very narrow neck that is sometimes clearly encircled by two moulded ridges, and a splayed mouth. Since the neck is substantially constricted, creating a far more closed vessel than any others discussed herein, their function may have been different. In fact, the narrow opening combined with a splayed mouth gives the impression that they might have held a substance like perfumed oil. Given the known employment in Near Eastern funerary practices of oil, which was perceived to have important purifying properties (Wicks 2015: 88-89, with refs), it would not be surprising to find small, elaborate bronze vessels holding oil deposited in burials.[20]

Whatever they had contained or received, they were presumably employed in conjunction with the other metal vessels heaped between the two coffins. In particular, the co-occurrence of the inkwells and similarly-sized, but open, chalice-style bronze vessels in both this chamber and Susa tomb T.693 may arise from a specific relationship between the two vessel types. In contrast to the grouping of the vessels in the Luristan burials, which suggested that the more open-style inkwells were meant to receive whatever had been held in the jugs, here the vessel grouping may indicate the opposite: that the narrow-necked inkwells held fluids to be transferred during the funerary rituals into the predominantly open vessels with which they were deposited.

At least eight inkwells were converted into "teapot"-like vessels. Three are completely preserved and another five (minimum) represented only by spouts and handles (Shishegar 2015: 340-341). Riveted onto the rim of

[20] In fact, in the Mari archives we find mention of a *ḫuburnum* vessel; a small metal container for holding "fine fat" or perfumed oil. The use of such receptacles in funerary contexts is also documented, with three allocated as offerings for the tomb of a woman named Batahra (Arkhipov 2012: 163, 489, text M.18618).

these vessels is a basket-style, cast metal handle with a flattened or slightly concave grip, and midway up the body emerges a z-shaped, tubular cast metal spout. A ring around the base of the spout seals the hole and provides a surface for fixture onto the outer wall of the vessel. Some method other than riveting must have been employed as no rivets are visible.[21] Two of the preserved "teapots", one made of bronze (Pl. 5a) and the other silver (Pl. 5b), are converted from vessels of the narrow-necked type 5 exclusive to this site. The third, however, is one of the slightly older pear-shaped jars with the rope-band at the shoulder (Pl. 5c). In contrast to the other "teapots" whose components were all fashioned from the same material, presumably during the original manufacturing process, the older vessel's handle and spout are clearly made from a different material (silver?) to that of their bronze body, suggesting they are probably later additions. If so, this would provide an interesting case of the re-use — even "upcycling" — of an older vessel.[22] The selection of this particular jar type for conversion may mean that in purpose and conception it varied little from the angular, narrow-necked type used for the other Ram Hormuz "teapots".

I have been unable to identify any obvious comparisons for the adaption of a jar into a "teapot" amongst the published Neo-Elamite archaeological material. Outside of Elam, several "teapots" made from various shaped jars were found in the Sangtarashan hoard (Oudbashi et al. 2013: Pl. 3), but these have open rather than tubular spouts and none have handles. A closer analogy in ceramic can be recognised in an isolated "teapot" at War Kabud; a 9.2cm high, fine buff ware jar with a handle at the neck and a bridged beak-trough spout (Pl. 5d) (Haerinck & Overlaet 2004: fig. 10:16, Pl. XVII, Pl. 64, no. B175-2). Much closer still is a distinctive "teapot" of Iron Age II northwest Iran, exemplified at Hasanlu in a small, medium fine ware jar with a basket-style handle and spout emanating from halfway up the body (Pl. 5e) (Cuyler-Young 1965: figs. 7.6 and 13). This has been described as a "lustration vessel" (Danti 2013: 363). On the Central Plateau, Tepe Siyalk also yielded this vessel type (Haerinck & Overlaet 2004: 33),

[21] Soldering with an alloy with a lower melting temperature than the metals being joined was the usual technique for joining (see Moorey 1994: 229, 274). On the other hand, the method of attaching a similar cast-bronze tubular spout with ring base onto an unprovenanced "kettle" is described as follows (Moorey 1971: 275, Pl. 81, no. 519): "a cast-bronze spout is passed through the body of the vessel and secured by flanges".

[22] Note also that the find of this jar in the Ram Hormuz chamber further confirms that Mecquenem was mistaken in applying an Achaemenid date to his examples.

and a Baba Jan "teapot" jar with a basket-handle and spout has also been published (Pl. 5f) (Goff 1970: fig. 7:10). It seems therefore that the "teapot" vessels at Ram Hormuz manifest a concept — if not a finished product — imported from elsewhere in Iran.[23]

The added spout and handle elements also imply a function different to that of the other inkwells. They were obviously intended for the controlled pouring of a small volume of some kind of liquid; whether into another vessel, directly onto the ground as a libation, or perhaps even directly into the coffins as an offering.[24] The presence in one of the "teapots" of a small custom-made bronze strainer shaped to rest against the interior of the neck and mouth suggests that whatever liquid was transferred into and poured out of these vessels had required filtration (e.g. wine). Amongst the metal objects heaped between the coffins were several other, rather extraordinary, vessels of unclear function, most notably a set of "frying pans" with an omphalos-base and handle mounted by a female figurine with fish body appendage; an item of clear religious significance (Wicks forthcoming). Rather than table service, we should probably therefore recognise in this collection an elaborate set of ritual utensils.

Inkwells beyond Luristan and Elam

Outside of Luristan and Elam just three inkwells have been excavated in funerary contexts: one in an Iron Age cemetery at Sanandaj in Iranian Kurdistan and two at Uruk in southern Mesopotamia.[25] At Sanandaj (Pl. 5g) the vessel was found in a wealthy ca. 7th century pit burial of an adult male (if the presence of an iron spearhead is considered a reliable indicator of sex) extended supine with a child positioned between his lower legs. The inkwell (SAN 1) was found next to the bronze belt that encircled his waist and the remaining vessels were distributed elsewhere around the body;

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[23] Another rather striking, but unfortunately uprovenanced, "teapot" said to have come from Luristan may also support this conclusion. This bronze globular jar with a basket-style handle and tubular spout (Amiet 1976: 54, no. 93) provides the closest match with the Ram Hormuz examples, but lacking archaeological context can contribute little to the present study.

[24] No identifiable lids were recovered for the Ram Hormuz coffins, but the possibility of the direct delivery of offerings into the coffin is nonetheless proposed here based on the occasionally attested provision of coffin lids with holes (Wicks 2015: 92-93, with refs).

[25] Since preparing this article, an inkwell quite similar to SAN 1 excavated at ancient Sarrez in Kurdistan province has been published. See Amelirad & Razmpoush 2015.

a small ceramic pot at the head and a ceramic cup and bronze bowl near the feet and the child (Amelirad et al. 2012: 44-45, Pls. 6-8). Notably no jug was present. This inkwell perhaps finds its closest parallels in type 2, particularly in its stepped base, though the neck and mouth are closer to type 1.

Two late Neo-Babylonian double-pot burials at Uruk, graves 228 and 233, each contained a single inkwell vessel (Boehmer et al. 1995: 68-69, Taf. 79 and 81). Both were primary interments of adults (sex undetermined) arranged in a flexed position. In 228 the inkwell (UK 1) had been deposited at the individual's feet in a bronze bowl together with a nipple-base beaker, while in 233 (UK 2) it was in front of the torso with a cluster of vessels including a bronze nipple-base beaker, two clay jars, a clay beaker and a small, green, glazed pot. The grouping of the inkwells with these other vessels seems to suggest their inclusion in the grave as part of a banqueting set for the deceased. These may have been interments of some of the wealthier members of the society, since in the Neo-Babylonian burials from Uruk published by R. M. Boehmer et al. (1995) bronze vessels are a relatively limited occurrence.[26] A third inkwell (UK 3) was found in a non-funerary context described as a layer with numerous sherds (Van Ess & Pedde 1992: 22). The details of UK 1 are difficult to determine based on the published photograph and sketch, but it may be closer to type 1 (Pl. 5h). Vessels UK 2 and UK 3 are not closely aligned with any of the five types so far distinguished, having a proportionally much larger lower body segment that narrows toward the base (Pl. 5i-j); thus a sixth discrete inkwell type may be delineated.

Far beyond Mesopotamia and Iran, excavations on Samos brought to light an isolated inkwell dedicated at the sanctuary of Hera alongside a series of bronzes from around the Near East that were reaching the island in the 7th century (Pl. 5k) (Kopcke 1968: 294, Pl. 127.I, no. 125; Moorey 1974: 194). This rather damaged vessel (SH 1), dated post-8th century by O. W. Muscarella (1988: 261), was referred to by G. Kopcke (1968: 294) as a "*Becher*". With its relatively short neck, everted rim and more angular lower segment it is closest to the type 2 inkwells and could indeed have been used for drinking. Its base may be comprised of stepped rings like the others of this type, but this detail cannot be distinguished well enough in the photograph.

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[26] Though obviously this statement must be tempered by recognition of the possibility of differential funerary treatment such as extramural burial for the most elite individuals.

Manufacture and Origin

P. R. S. Moorey (1971: 264) observed that in manufacturing the rather elaborate inkwell shape, the metal workers were "exploiting as fully as possible the decorative qualities of plain beaten sheet metal". The vessels would have been made using a single sheet of bronze cast from an open mould, hammered and annealed into the desired shape by either sinking or raising.[27] It is worth noting, however, Miroschedji's (1981: 112) assertion that his example from Susa had been made from two separate sheets of bronze joined at the shoulder. A photograph of the vessel (Pl. 3e) shows what appears to be a horizontal crack at the shoulder, but I cannot discern any obvious signs of the joining of two individual sheets together. Since no other inkwell seems to have been fabricated in this way I am inclined to think the break was mistaken as the location of a join, but a closer examination of the vessel would be required to confirm this.

Information on the composition of the bronze alloy has to my knowledge only been made available for one of the inkwells: War Kabud A10-6. The results of its analysis were published by Fleming et al. (2006: 34, table 1), who indicated that the bronze contained 89.1% copper and 9.6% tin, with various other trace elements making up the remainder. This percentage of tin deviates little from the mean of 9.5% (±.67%) found among the total of 23 analysed bronze cups/bowls from the same site (Fleming et al. 2005: 43). With some caution, this data might be used to conjecture that inkwell WK A10-6 was a product of the same, presumably local, workshop (or workshops) that produced the other vessels.

Indeed, the inkwells and other bronze vessels that are typically found in Luristan are generally assumed to be local products, despite the lack of evidence in this region for metal workshops (Fleming et al. 2006: 36-7; Haerinck & Overlaet 2004: 81; Oudbashi et al. 2013: 148). Taking into account the relative concentration of the vessels in the Pusht-i Kuh cemeteries and the higher number of individual burials in which they were deposited when compared to Elam and elsewhere, this remains a fair assessment. It is worth nothing, however, that the earlier pear-shaped jar with rope-band shoulder, which could represent an inkwell predecessor,

[27] This was the method generally used to produce Luristan's sheet bronze vessels (Moorey 1974: 261, 302), though we still know nothing of the tools that were used (Fleming et al. 2006: 36-37).

was found mainly at Susa and may therefore have been a local Elamite product. Raising a further degree of uncertainty over a Luristan source for the Ram Hormuz inkwell corpus is the slightly later date of the tomb and the presence of the silver examples. Since bronzes are considered the predominant products of the Luristan workshops, it is not out of the question that Ram Hormuz inkwells, produced also in a silver (?) material, represent later Elamite variants.[28] If the geographical proximity of Luristan and Elam is kept in perspective, distinctions between "local" and "imported" seem of little consequence anyway; the inkwells were probably quite at home in both areas and any workshops could have served them equally.

The occurrence of two inkwells at Uruk together with bronze nipple beakers, usually presumed to have been products of Luristan, would seem to reflect elite contacts or exchange with Luristan, or more specifically the Pusht-i Kuh area.[29] Since the double-pot burial is typical of Neo-Babylonian funerary practice — in contrast to the elite preference for cist tombs and vaulted chambers in Luristan and Elam respectively — these are more likely to be imported items than to manifest a foreign element in the Uruk population (e.g. Muscarella 1988: 261). Alternatively, the observation that two of the three inkwells at Uruk represent a unique variant known only from this site suggests that local production should not be entirely ruled out, especially since there is good evidence for proficient bronze industries in Babylonia at this time.[30]

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[28] Miroschedji (1981: 34) and Muscarella (1988: 261) also envisage both regions as potential sources for the inkwells.

[29] Nipple beakers also occur in 11 more double-pot burials at Uruk, often with other bronzes (Boehmer et al. 1995: Gräber 262, 278, 279, 281, 291, 317, 334, 376, 349, 469, 518). While this would seem to support the notion of Uruk-Luristan links, the question of the origin of this beaker type still remains open to debate (see e.g. Muscarella 1974: 247-48). It is particularly worth bearing in mind that only one example of this type has ever been found in an Iron Age III Luristan grave (Haerinck & Overlaet 2004: 81-82).

[30] J. Brinkman (1988: 140) has convincingly demonstrated through textual evidence that during the first half of the 1st millennium Babylonia possessed active bronze production centres. E. Braun-Holzinger's (1988) survey of the archaeological evidence likewise points to the manufacture of a significant volume of bronzes at various sites in southern Mesopotamia.

Conclusions

While the overall similarities in appearance of the so-called "inkwells" have allowed scholars to group them together under this appellation, a range of minor variations in detail can in fact be observed in their formal properties, probably attributable to a combination of functional differences, chronological change and differing centres of manufacture. Through an examination of their individual elements, I have classified the vessels here into six sub-types. Types 1 and 2 were the most widespread, occurring predominantly in the Pusht-i Kuh, but also in the Pish-i Kuh, Susa, Sanandaj and much further beyond at Samos. Type 3 is represented by a single example from Karkhai in the Pusht-i Kuh, types 4 and 5 were isolated to Ram Hormuz, and type 6 was found only at Uruk. Correlates between types 1-5 and the gender of the interred can be identified, with 1 and 2 most often found in adult male burials and 3, 4 and 5 only with adult females, but the sample size is hardly sufficient to be meaningful. With respect to their function, vessels of types 1, 2, 3, 4 and 6 were most likely conceived as elements of drinking sets for the deceased, while the narrow-necked type 5 has a more jar-like appearance. With an added spout and basket handle the latter was turned into a vessel for filtering and pouring some type of liquid. If we acknowledge the possibility that funerary rites included libations, these "teapots", and even some of the inkwells themselves, could be envisaged as receptacles used variously to hold, transfer and pour liquid offerings.

In considering the broader implications of the evidence outlined in this contribution, it is clear that the distinctive sheet metal "inkwell" vessel was a phenomenon restricted to a relatively short chronological frame spanning from around the late 8th to the mid-6th century and that geographically its use was largely bound within west and southwest Iran. In the more outlying areas of Sanandaj and Uruk the vessels can probably be considered in light of either direct contacts with elite groups in Luristan or Elam, or interregional trading networks. The appearance of a single example at Samos must instead be viewed in terms of a much broader network of 7th century exchange.

The frequency of inkwells in Luristan graves and their increasingly apparent deposition in Elamite burials points to links between the elite of these two regions,[31] whether through mechanisms of gift exchange or

[31] Muscarella (1988: 261) has asserted that the inkwells "objectively attest" to interconnections between the two regions.

economic transaction. Though hardly surprising given their geographic proximity, this observation is significant because the assemblages of Luristan's Iron Age III cemeteries do not generally offer evidence for interaction with Elam or common sources for manufactured goods, being predominantly local with the occasional presence of Assyrian or Babylonian objects (Miroschedji 1990: 185). Likewise, material familiar from these Luristan burial assemblages tends not to occur in late Neo-Elamite funerary contexts, even at an elite level. Thus these enigmatic "inkwells" emerge as a remarkable and singular instance of a shared funerary object, woven into the rich tapestry of funerary belief and practice manifest in these regions' mortuary remains.

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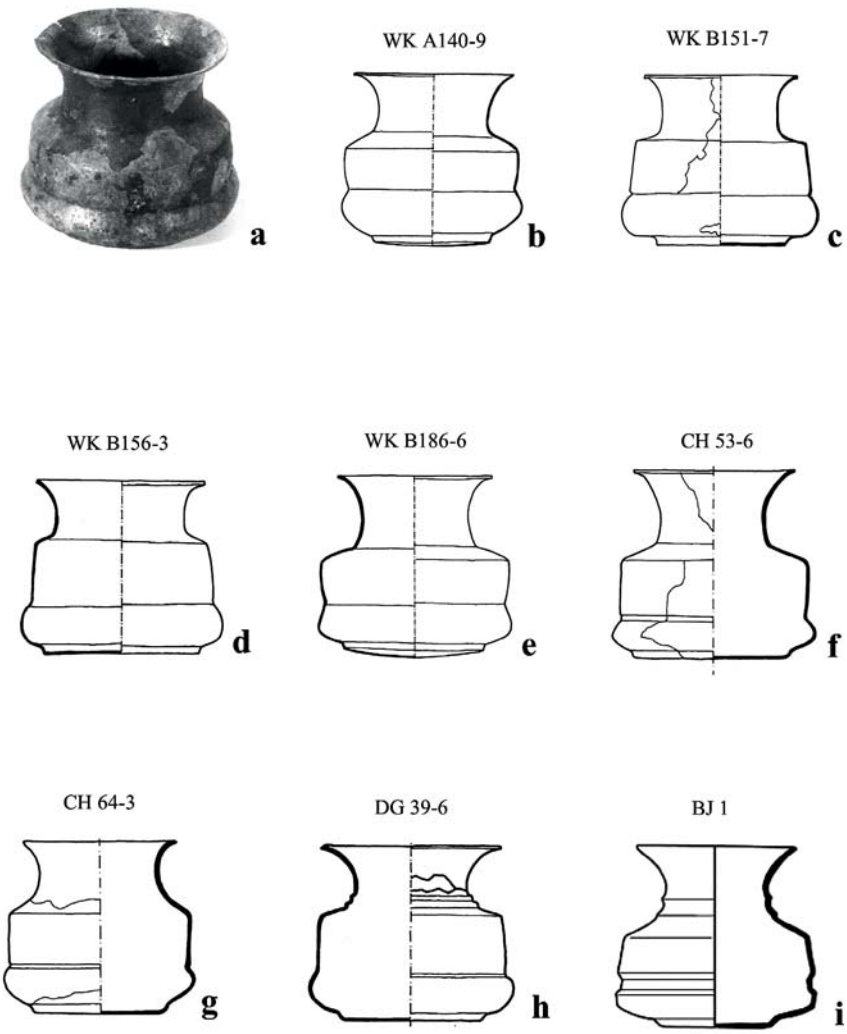
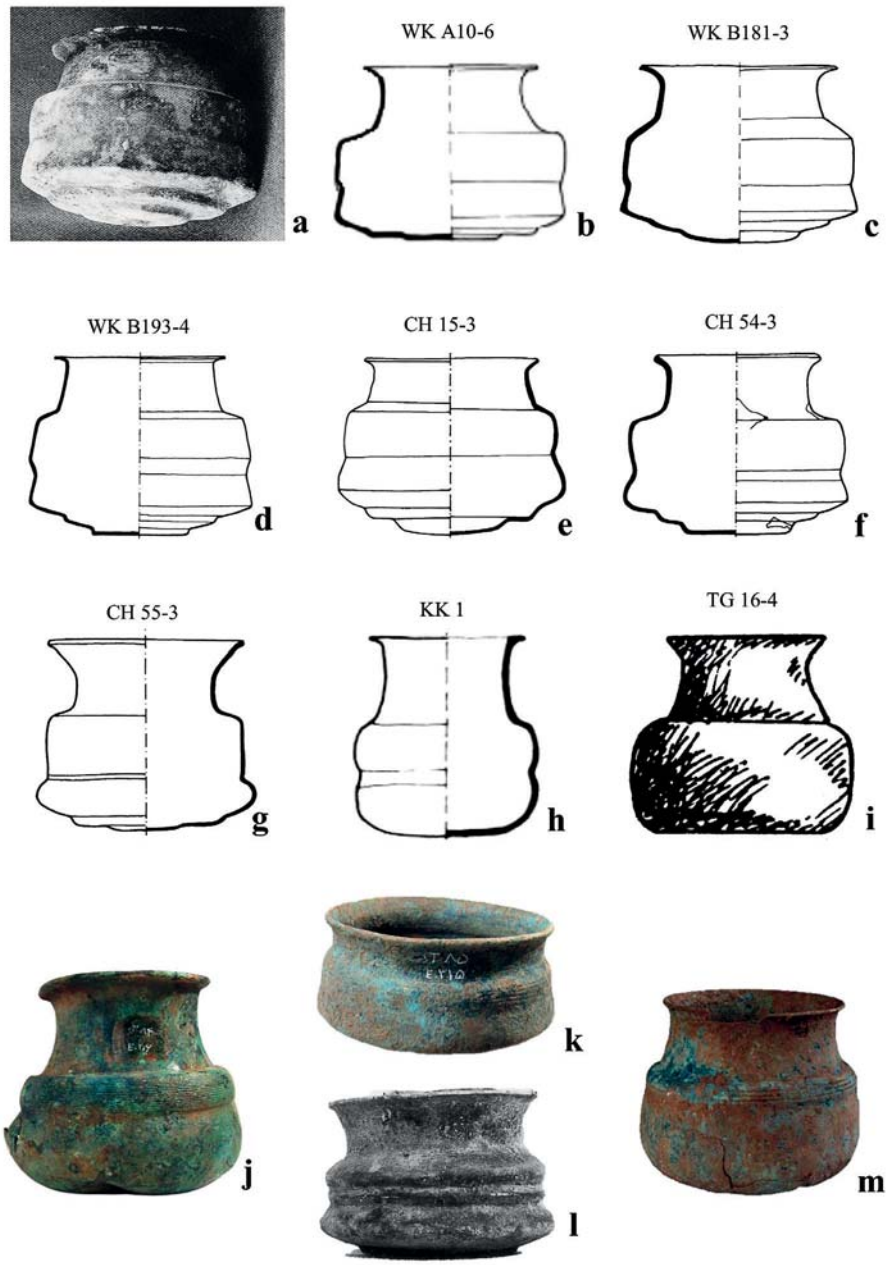
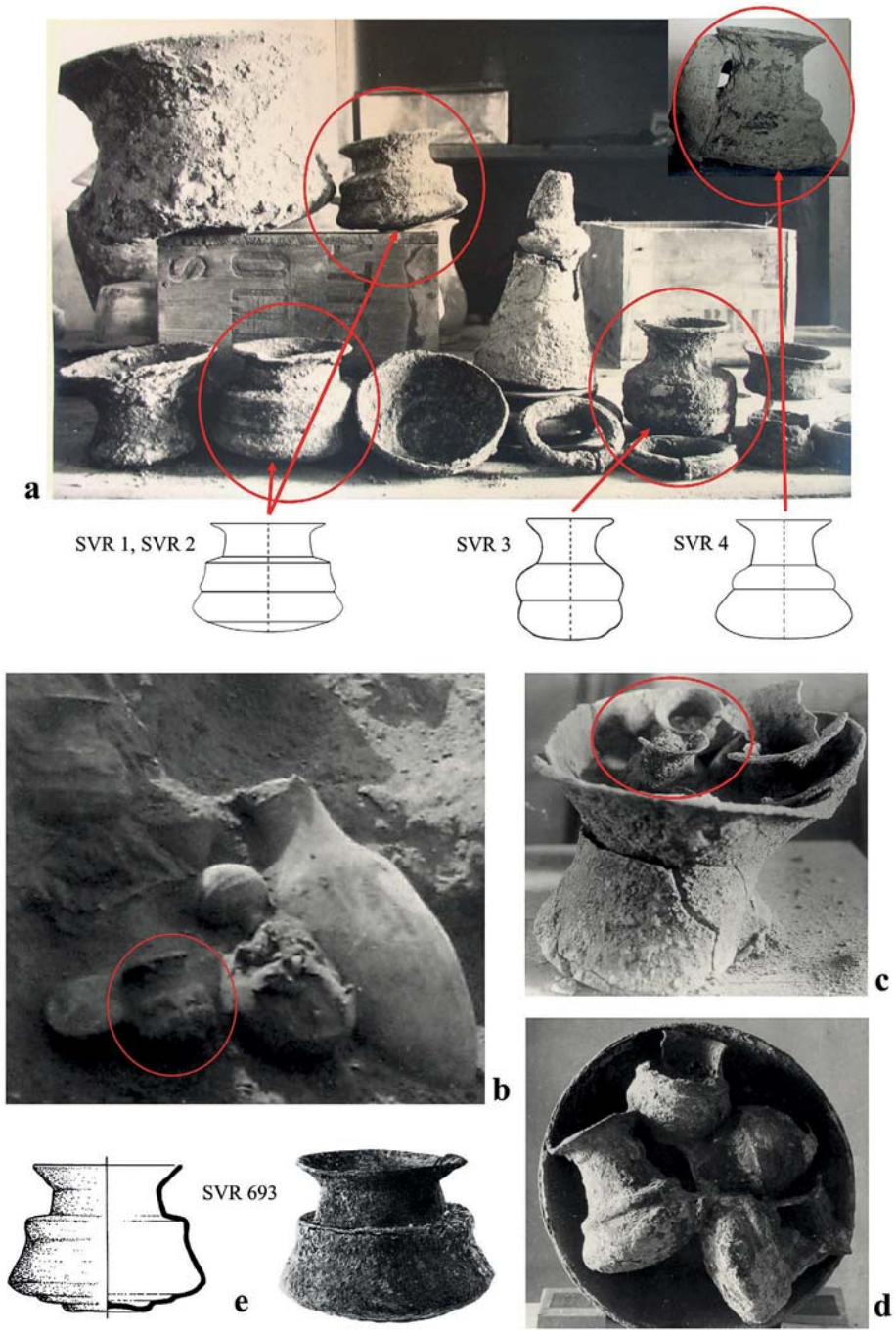


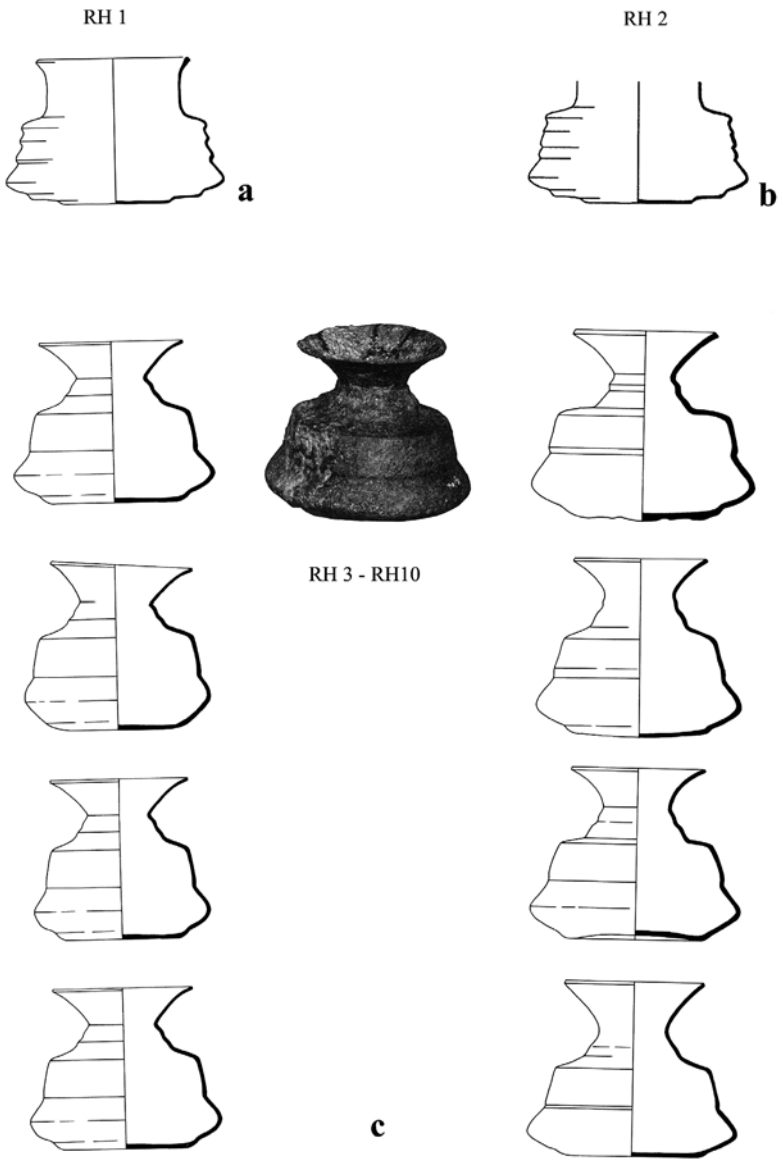
Pl. 1. Type 1 inkwells: a. War Kabud B156-3 (from Haerinck & Overlaet 2004: Pl. 143); b-e. War Kabud A140-9, B151-7, B156-3 and B186-6 (from Haerinck & Overlaet 2004: Pls. 55, 59, 60 and 66); f-g. Chamahzi Mumah 53-6 and 64-3 (from Haerinck & Overlaet 1998: figs. 49 and 57); h. Djub-i Gauhar 39-6 (from Haerinck & Overlaet 1999: Pl. 27); i. Baba Jilan 1 (from Hasanpur 2015: Pl. 21). Images not to scale.



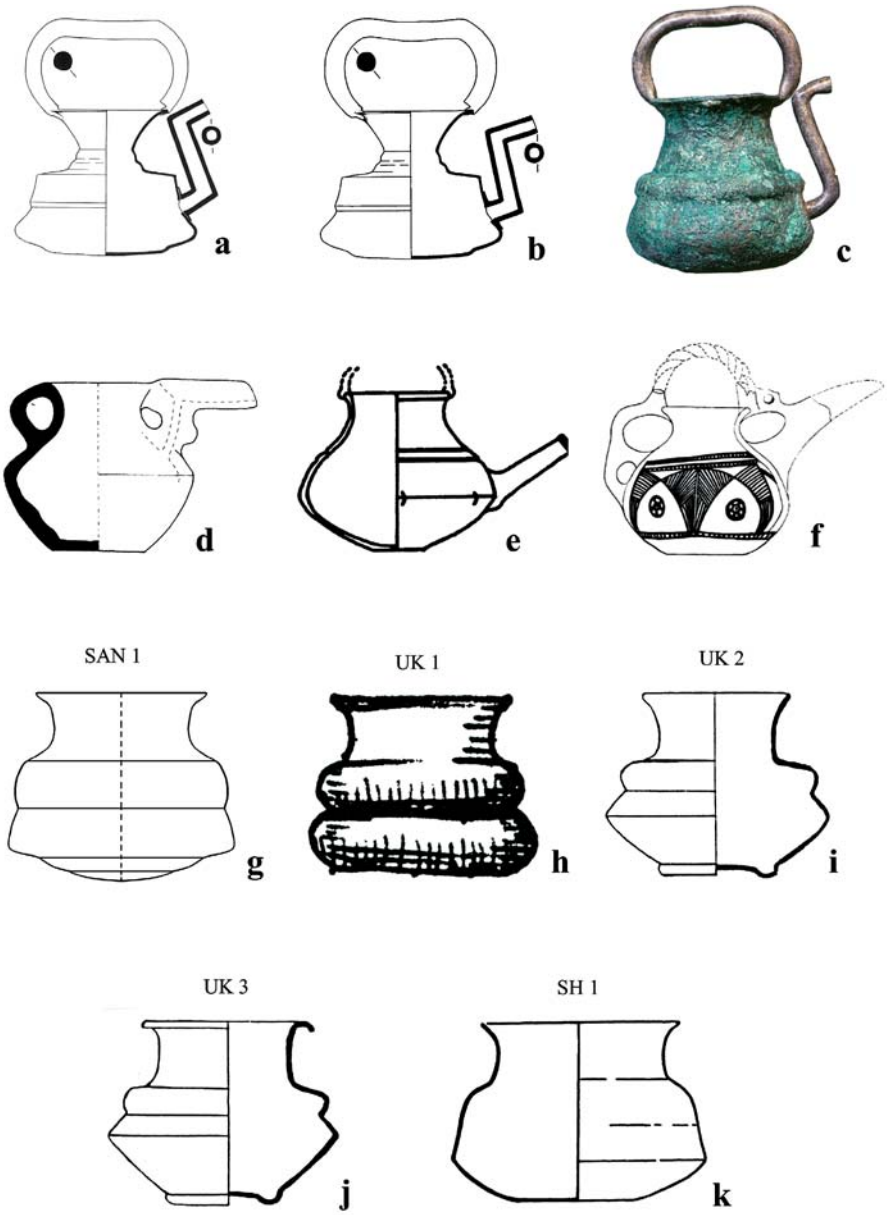
Pl. 2. Type 2 inkwells: a. Chamahzi Mumah 15-3 (from Haerinck & Overlaet 1998: Pl. 64c-d); b. War Kabud A10-6 (modified after Haerinck & Overlaet 2004: Pl. A10); c-d. War Kabud B181-3 and B193-4 (from Haerinck & Overlaet 2004: Pls. 64 and 68); e-f. Chamahzi Mumah 15-3 and 54-3 (from Haerinck & Overlaet 1998: figs. 19 and 50); g. Chamahzi Mumah inkwell 55-3 of undefined type (from Haerinck & Overlaet 1998: fig. 51). Type 3 inkwell: h. Kutal-i Gulgul 1 (Vanden Berghe 1973: 28, no.4). i. Tepe Giyan inkwell TG 16-4 of undefined type (from Ghirshman & Contenau 1935: Pl. 11, T.16-4). j. Iron Age II bronze rope-neck vessel from Sangtarashan (from Oudbashi et al. 2013: Pl. 2d); k. Short, broad-necked vessel from Sangtarashan (Oudbashi et al. 2013: Pl. 2a); l. Short, broad-necked vessel from Djub-i Gauhar (Haerinck & Overlaet 1999: 78b); m. Squat vessel from Sangtarashan (Oudbashi et al. 2013: Pl. 1c). Images not to scale.



Pl. 3. Various inkwell types from Susa: a. SVR 1, SVR 2, SVR 3 and SVR 4 from Susa (main image and inset from Mecquenem 1926: Pls. XVII and XXV; line drawings by the author); b. inkwell in situ at Susa (photograph from Mecquenem 1926: Pl. 12); c. Possible inkwells from Susa inside a bronze vessel (from Mecquenem 1922: fig. 33); d. Earlier pear-shaped inkwells from Susa (from Mecqeunem 1929: Pl. 8); e. Inkwell from Susa tomb 693 (from Miroschedji 1981: fig 40:12 and Pl. XII: 22). Images not to scale.



Pl. 4. Type 4 inkwells: a. Fragmentary Ram Hormuz inkwell RH 1 (from Shishegar 2015: 343, no. 8/1); b. Fragmentary silver Ram Hormuz inkwell RH 2 (from Shishegar 2015: 378, no. 4). Type 5 inkwells: c. Ram Hormuz inkwells RH 3-10 (from Shishegar 2015: 336-37, photograph of no. 6/2, line drawings of nos. 6/1-6/8). Images not to scale.



Pl. 5. a. Bronze "teapot" from Ram Hormuz (from Shishegar 2015: 340, no. 7/1); b. Silver "teapot" from Ram Hormuz (from Shishegar 2015: 378, no. 2); c. Older pear-shaped bronze "teapot" with silver spout and handle from Ram Hormuz (from Shishegar 2015: 341, no. 7/5); d. War Kabud "teapot" B175-2 (from Haerinck & Overlaet 2004: Pl. 64); e. Hasanlu basket-handled "teapot" (from Cuyler 1965: fig. 7.6); f. Baba Jan basket-handled "teapot" (Goff 1970: fig 7:10); g. Inkwell from Sanandaj burial A6 (line drawing by the author after photograph in Amelirad 2012: Pl. 34); h. Inkwell UK1 of undefined type from Uruk grave 228 (from Boehmer et al. 1995: Taf. 79a-b). Type 6 inkwells: i. Inkwell UK 2 from Uruk grave 233 (from Boehmer et al. 1995: Taf. 81e); j. Inkwell UK 3 from Uruk (from Strommenger 1967: Taf. 32.7). k. Samos inkwell SH 1 (from Moorey 1974: fig. 4). Images not to scale.

Appendix 1: Table of Inkwells

Object No. Plate Ref.	Site/Grave	Location in Grave	Burial Sex M/F	Vessel ht/diam (cm)	Base	Body	Neck[1]	Mouth/Rim	Vessel Sub-type	References
WK A10-6 Pl. 2b	War Kabud A10 cist grave	In front of individual's flexed forearms, next to quiver	M	7.8/-	Stepped rings	Slightly angular contours; shorter lower segment	Slightly narrow; mid-height; slightly concave	Everted rim	2	Haerinck & Overlaet 2004: Pls. 8, 143
WK A140-9 Pl. 1b	War Kabud A140 pit grave with 2 slabs and boulders	At feet of individual, placed over mouth of a jug	F	8.0/-	Flat	Slightly angular contours; equal segment height; slightly protruding lower segment	Slightly narrow; tall; concave	Splayed mouth	1	Haerinck & Overlaet 2004: Pls. 55, 143
WK B151-7 Pl. 1c	War Kabud B151 undefined grave	-	M	9.3/-	Flat	Angular shoulder; rounded, protruding, shorter, lower segment	Slightly narrow; tall; concave	Splayed mouth	1	Haerinck & Overlaet 2004: Pl. 59
WK B156-3 Pls. 1a, 1d	War Kabud B156 undefined grave	-	?	7.1/8.1	Flat	Slightly angular shoulder; short, rounded protruding, shorter lower segment	Slightly narrow; mid-height; slightly concave	Splayed mouth	1	Haerinck & Overlaet 2004: Pls. 60, 143
WK B181-3 Pl. 2c	War Kabud B181 cist grave	-	M	7.8/-	Stepped rings	Angular contours; shorter lower segment	Broad; short; straight	Everted rim	2	Haerinck & Overlaet 2004: Pls. 64, 142
WK B186-6 Pl. 1e	War Kabud B186 cist grave	-	F	8.6/-	Flat	Slightly angular contours; slightly shorter lower segment	Narrow; tall; concave	Splayed mouth	1	Haerinck & Overlaet 2004: Pls. 66, 142
WK B193-4 Pl. 2d	War Kabud B193 cist grave	-	M	8.7/-	Stepped rings	Angular contours; shorter lower segment	Broad; short; straight	Everted rim	2	Haerinck & Overlaet 2004: Pls. 68, 142
CH 15-3 Pls. 2a, 2e	Chamahzi Mumah 15 cist grave	Placed over mouth of a jug	M	7.9/10.0	Stepped rings	Slightly rounded contours; equal segment height; protruding lower segment	Broad; short; straight	Everted rim	2	Haerinck & Overlaet 1998: Fig. 19, Pls. 18a, 56b, 64cd
CH 53-6 Pl. 1f	Chamahzi Mumah 53 cist grave	At feet of individual? Placed in a bowl next to a strainer and jug	M	10.0/11.0	Flat	Angular shoulder; shorter, slightly rounded, protruding lower segment	Narrow; tall; concave	Splayed mouth	1	Haerinck & Overlaet 1998: Fig. 49, Pl.27
CH 54-3 Pl. 2f	Chamahzi Mumah 54 cist grave	Placed over mouth of a jug	M	9.2/11.4	Stepped rings	Rounded shoulder; shorter, slightly angular and protruding lower segment	Slightly narrow; mid-height; straight	Everted rim	2	Haerinck & Overlaet 1998: Fig. 50

1 Neck width defined using measurement of narrowest point of neck as a percentage of broadest point of shoulder (i.e. neck/shoulder): very narrow ≤ 50%; narrow 51-60%; slightly narrow 61-69%; broad ≥ 70% Neck height defined using distance from shoulder to rim as a percentage of total height (i.e. neck/total height): short ≤ 33%; mid-height 34-39%; tall ≥ 40%.

Object No. Plate Ref.	Site/Grave	Location in Grave	Burial Sex M/F	Vessel ht/diam (cm)	Base	Body	Neck	Mouth/Rim	Vessel Sub-type	References
CH 55-3 Pl. 2g	Chamahzi Mumah 55 cist grave	Placed over mouth of a jug	M	8.6/10.0	Stepped rings	Slightly angular shoulder; shorter, rounded, protruding lower segment	Slightly narrow; tall; concave	Splayed mouth	1&2	Haerinck & Overlaet 1998: Fig. 51
CH 64-3 Pl. 1g	Chamahzi Mumah 64 cist grave	Next to a jug	M	8.5/9.3	Flat	Slightly angular shoulder; shorter, rounded protruding lower segment	Slightly narrow; tall; concave	Splayed mouth	1	Haerinck & Overlaet 1998: Fig. 57, 64b
DG 39-6 Pl. 1h	Djub-i Gauher 39 cist grave	In front of lower leg of individual, placed over mouth of a jug	F	8.0/9.2	Flat	Angular shoulder; shorter, rounded protruding lower body	Narrow; tall; concave; two moulded ridges at base	Splayed mouth	1	Haerinck & Overlaet 1999: Pl. 27, 78a
KK 1 Pl. 2h	Karkhai pit burial 1	Resting in a bowl in front of face (near hands) of semi-flexed individual	F	c.7.5/7.0	Flat	Rounded contours; equal segments	Broad; very tall; straight	Narrow, everted rim	3	Vanden Berghe 1973: 26, 28
BJ 1 Pl. 1i	Baba Jilan grave-yard, context not indicated	-	-	c.7.0/7.5	Flat	Angular contours; broad constriction (?); shorter lower segment	Narrow; tall; moulded ridge at base	Splayed mouth	1	Hasanpur et al. 2015: Pl. 21
TG 16-4 Pl. 2i	Tepe Giyan Tomb 16	Placed near the head of semi-flexed individual with a jug, small jar and bowl	-	-	Flat	Round contours (?)	Slightly narrow; tall; concave (?)	Splayed mouth (?)	1(?)	Ghirshman & Contenau 1935: Pl. 11, T.16-4
SVR 1 Pl. 3a	Susa Ville Royale, undefined burial 1	-	-	-	-	Angular shoulder; equal segments(?); slightly angular, protruding lower segment	Broad; short; straight	Everted rim	2(?)	Mecquenem 1926: Pl. XVII
SVR 2 Pl. 3a	Susa Ville Royale, undefined burial 2	-	-	-	-	Angular shoulder; equal segments(?); slightly angular, protruding lower segment	Broad; short; straight	Everted rim	2(?)	Mecquenem 1926: Pl. XVII
SVR 3 Pl. 3a	Susa Ville Royale, undefined burial 3	-	-	-	-	Rounded contours; equal segments	Narrow; tall; slightly concave	Splayed mouth	1 or 3(?)	Mecquenem 1926: Pl. XVII; 1943: fig. 42.2
SVR 4 Pl. 3a	Susa Ville Royale, undefined burial 4	-	-	-	-	Rounded contours; taller protruding lower segment	Narrow; tall; straight	Splayed mouth	1(?)	Mecquenem 1926: Pl. XXV
SVR T.27 -	Susa Ville Royale, Chantier A, pit burial T.27	-	F	-	-	-	-	-	-	Unpublished (R. Ghirshman); ref. Miroschedji 1990: 183-84

Object No. Plate Ref.	Site/Grave	Location in Grave	Burial Sex M/F	Vessel ht/diam (cm)	Base	Body	Neck[1]	Mouth/Rim	Vessel Sub-type	References
SVR 693 Pl. 3e	Susa Ville Royale II, Level 7B, T.693	In a tomb chamber with 6 burials. Placed with a bronze chalice and iron blade	M?	9.0/12.0	Stepped rings	Angular contours; taller, protruding lower segment	Slightly narrow; short; straight	Everted rim	2	Miroschedji 1981: fig. 40:12, Pl. XII: 22
RH 1 Pl. 4a	Ram Hormuz tomb chamber	-	F	c.(?)/12.5	Stepped rings	Angular contours; multiple segments; protruding lower segment	Broad; straight (?)	-	4	Shishegar 2015: 343, no. 8/1
RH 2 Pl. 4b	Ram Hormuz tomb chamber	-	F	c.(?)/11	Stepped rings	Angular contours; multiple segments; protruding lower segment	Slightly narrow; straight (?)	-	4 (silver material)	Shishegar 2015: 378, no. 4
RH 3 Pl. 4c	Ram Hormuz tomb chamber	-	F	12.1/14	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 336, no. 6/1
RH 4 Pl. 4c	Ram Hormuz tomb chamber	-	F	11.2/13.4	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 336, no. 6/2
RH 5 Pl. 4c	Ram Hormuz tomb chamber	-	F	11/13.4	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 336, no. 6/3
RH 6 Pl. 4c	Ram Hormuz tomb chamber	-	F	10.6/13.4	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 336, no. 6/4
RH 7 Pl. 4c	Ram Hormuz tomb chamber	-	F	10.6/13.2	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 337, no. 6/5
RH 8 Pl. 4c	Ram Hormuz tomb chamber	-	F	10.7/12.2	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 337, no. 6/6
RH 9 Pl. 4c	Ram Hormuz tomb chamber	-	F	10.6/12.5	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 337, no. 6/7

Object No. Plate Ref.	Site/Grave	Location in Grave	Burial Sex M/F	Vessel ht/diam (cm)	Base	Body	Neck[1]	Mouth/Rim	Vessel Sub-type	References
RH 10 Pl. 4c	Ram Hormuz tomb chamber	-	F	10.6/12.5	Flat	Angular shoulder; equal segments; slightly rounded, protruding lower segment	Very narrow; tall; ridge at base	Splayed mouth	5	Shishegar 2015: 334, 337, no. 6/8
SAN 1 Pl. 5g	Sanandaj (Iranian Kurdistan), pit burial A6	At waist of individual wearing bronze belt, extended in supine position, a child interment placed between the legs	M?	c.7/c.8	Stepped rings	Slightly rounded shoulder; angular lower segment	Slightly narrow; mid-height; slightly concave	Splayed mouth	2 and 1	Amelirad et al. 2012: Pls. 6-8
UK 1 Pl. 5h	Uruk double-pot burial 228	At feet of flexed individual in a bronze bowl with a bronze nipple-base beaker	-	7.5/8.0	Flat	Rounded shoulder(?); equal segments(?); rounded contours(?)	Slightly narrow; mid-height; slightly concave	Everted rim	1(?)	Van Ess & Pedde 1992: 21-22, Taf. 22, no. 150; Boehmer et al. 1995: Taf. 79
UK 2 Pl. 5i	Uruk double-pot burial 233	At approx. waist of flexed individual with bronze nipple-base beaker, 2 clay jars, a clay beaker and a small green glazed pot	-	7.1/8.4	Flat	Rounded shoulder; taller, angular lower segment narrowing toward base	Narrow; mid-height; concave	Splayed mouth	6	Van Ess & Pedde 1992: 22, Taf. 25, no. 152; Boehmer et al. 1995: Taf. 81
UK 3 Pl. 5j	Uruk non-burial context (in a "layer" with numerous sherds)	-	-	7.4/9.5	Flat	Rounded shoulder; taller, angular lower segment narrowing toward base	Slightly narrow; mid-height; slightly concave	Everted rim	6	Van Ess & Pedde 1992: 22, Taf. 25, no. 151
SH 1 Pl. 5k	Heraion of Samos	-	-	8.4/-	-	Slightly angular shoulder; approx. equal segments; angular lower segment	Broad; short; straight	Everted rim	2	Kopcke 1968: 294, Pl. 127.I (cat no. 125); Moorey 1974: 193, fig. 4

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THE MYSTERIOUS SECOND ACHAEMENID BRONZE COFFIN AND THE IVORY COMB FROM SUSA

BY

Yasmina WICKS[1], Javier ÁLVAREZ-MON[2], François BRIDEY[3] & Julien CUNY[4]
([1]The University of Sydney; [2]Macquarie University;
[3]Départment des Antiquités Orientales, Musée du Louvre;
[4]Départment des Antiquités Orientales, Musée du Louvre)[1]

This article is dedicated to Ernie Haerinck, who is sorely missed and fondly remembered

Abstract: No-one concerned with the characteristics of Persian funerary practices can neglect to reference the celebrated bronze coffin containing the remains of a "Persian princess" unearthed at Susa in 1901 by Jacques de Morgan. When discussing this remarkable find, several scholars have indicated that it was not the only coffin of this type discovered by Morgan; and yet no reference leads back to another example in his publications. Here the tracks of this mysterious missing *second* bronze coffin, and an ivory comb sometimes said to have been found in it, are followed through the academic labyrinth and into the storage rooms of the Louvre Museum where the quandary can finally be resolved.

Keywords: Bronze, Coffin, Ivory, Comb, Susa.

Introduction

Here the reader will find a resolution to a mystery they probably never knew existed: that of the second Achaemenid bronze coffin of Susa. On the 10th of February 1901, excavating at a depth of 6 metres on the south-east border of the Acropole, 4 metres to the south of a Neo-Elamite temple, Jacques de Morgan encountered an elite Achaemenid bronze coffin burial [Pl. 1].[2] Morgan was immediately struck by its uniqueness and in his 1905 publication of the find relayed that, having never seen any coffin of its

[1] With the participation of Loretta Rossetti (*Laboratoire Arc'Antique*, Nantes).

[2] Described as ca. 6 m, but shown on Morgan's (1905, fig. 66) plan at 6.5 m, the burial lay approximately 2.5 m below the level of the ca. 700 BC Neo-Elamite temple (4 m depth) on the same north-south orientation, and followed the axial lines of the Neo-Elamite pavement and walls at 3.5-4 m depth (Morgan 1905: 36). It is worth noting that at this

kind, he had initially presumed it was some kind of cultic basin (Morgan 1905: 36-37). The north-south oriented bronze "tub" was ensconced in a mix of coarse vessel sherds, ashes, charred bones and filled with a jumble of unbaked bricks presumed to belong to a collapsed vaulted tomb that had once encased it (Morgan 1905: 38, 40).[3] Once the rubble was cleared the rich contents of the coffin were revealed: two alabaster vases, a silver bowl, two coins and an elaborately adorned skeleton extended on its back with head held upright against the south coffin wall.[4] Based on the jewellery, the absence of weapons and the small size of the bones, the burial was attributed to a wealthy Persian female, presumed to be of advanced age based on tooth wear (Morgan 1905: 38, 42-43). This woman would later be elevated to the status of an Achaemenid "princess" by Roland de Mecquenem (1943-44: 138), although some scholars have more recently raised concerns about this gender attribution since men also wore jewellery like that found in the coffin (e.g. Tallon 1992: 242; Amiet 2006; Frank 2010: 365).

In the context of discussions of this burial, several scholars have also mentioned in passing the discovery of a second analogous bronze coffin by Morgan, sometimes even said to have been discovered directly in association with the first. Yet a thorough scan of the only cited source for this information, Morgan's abovementioned 1905 publication, reveals not a trace of this purported second coffin. Nor had he mentioned it in his 1902 report on the first burial (and the purchase of its contents for 3200 francs!) in *La Délégation en Perse du Ministère de l'Instruction Publique 1897 à 1902*; in fact, the burial is described quite to the contrary as "*malheureusement isolée*" (Morgan 1902: 94-96). Despite this curious absence, nowhere does any scholar appear to have questioned the existence of this second tub or quoted an alternative source for its publication. Nor have any images of the vessel surfaced. Here the tracks of this mysterious missing coffin are followed through the literature and into the storerooms of the Louvre Museum where the quandary can be finally solved.

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point on the tell, Morgan judged that the Achaemenid stratigraphic level had stopped at 3 m below the surface; i.e. 3-3.5 m above the burial.

[3] Based on their dimensions (the same as those used for the Achaemenid ramparts) and material of the bricks, Morgan (1905: 38) asserted that they were contemporary with the burial.

[4] As suggested by the fact that Morgan (1905: 36) notes uncovering a gold necklace to the south end.

A Coffin in the Shadows

Our first encounter with a second bronze coffin from Susa takes place in the 1913 edition of *Les Antiquités de la Susiane (Mission J. de Morgan)*, where Maurice Pézard and Edmond Pottier (1913: 124-25) catalogue not just one, but two "*sarcophages de bronze*": the first (cat. no. 268) belonging to a richly equipped female, the second (cat. no. 269) described simply as a "*sarcophage analogue*". These authors cite Morgan's 1905 report on the first burial as the reference for both coffins.[5] This citation, which is incorrect insofar as the second coffin is concerned, is repeated in a republication of the catalogue in 1926 (Pézard & Pottier 1926: 114-15).[6] The erroneous references to Morgan by later scholars may stem from these two authoritative early publications.

In 1938 Mecquenem (1938: 326) commented that "*a bronze sarcophagus containing the remains and jewels of an Achaemenid lady is unique. Probably an Elamite sarcophagus was re-used*". Here he made no mention of a second coffin, but a few years later would write (Mecquenem 1943-44: 138):

> "[…] *two bathtubs in bronze; one of them was re-employed as a tub for receiving the remains of a princess of the Achaemenid period; the other was found turned over on its side in the vicinity of the point where the fragments of the stele of Hammurabi were found*."

Not only is this excerpt of interest in that it seems to confirm the existence of a second coffin, but also for the additional information it provides: that the coffin was overturned at the time of discovery and that it was found somewhere near fragments of a stele of Hammurabi. It is interesting to observe that on both occasions Mecquenem adopts the view that this particular kind of coffin was not Persian in origin, but must have been a much older, re-used vessel. He further elaborates (Mecquenem 1943-44: 138):

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[5] Their heading "*Sarcophages de bronze*" is followed immediately by the statement "*ils ont la forme d'une cuve à bords évasés rappelant nos modernes baignoires*" footnoted with a reference to Morgan (1905: 29, fig. 2), who in fact only mentions the one coffin.

[6] This second (1926) edition presents a revision of the first, including the excavations at Bender Bouchir by M. Pézard and his brother lieutenant G. Pézard (1913). The collections present the combined materials from Susa (*MDP* 1 to 17, 1900-1925).

> "*We think that these two tubs belong to the period of the coffins in baked clay, which must have extended from the IIIrd Dynasty of Ur at Susa up to the Kassite conquests, and that they were destined for the burial of great dignitaries*."

Mecquenem does not categorically state on either occasion that the second coffin was empty, but at the same time he does not mention any associated contents. Yet if we fast forward to Pierre Amiet's 1988 *Suse: 6000 ans d'histoire*, two bronze coffin interments from the Acropole once again appear and a further morsel of evidence comes to light: the second coffin must have been pillaged since only an ivory comb was found inside it (Amiet 1988: 134). Once again, however, the reader is not referred to an earlier source for this information. The comb in question (inventory no. Sb 9095, further discussed in section 5), restored from a series of fragments, had been mentioned at least as far back as Pézard and Pottier's 1926 Louvre catalogue, but not in association with this findspot (Pézard & Pottier 1926: cat. no. 148). Even when reporting on Morgan's find of the comb in an earlier publication of 1972, Amiet did not offer a provenience.

A number of scholars have since discussed the first Achaemenid bronze coffin burial and its remarkable grave goods, but remained silent on the second vessel (e.g. Elayi & Elayi 1992; Tallon 1992: 242-52; Benoit 2003: 464-65; Razmjou 2005: 174-80; Stein 2014: 277-78). Yet with no concrete body and no precise origin this mysterious second coffin has continued to weave like a shadow in and out of the literature, with Morgan's 1905 chapter — notably entitled in the singular "*Découverte d'une sépulture achéménide à Suse*" — remaining the only cited source. In 1990 Daniel T. Potts (1990: 320) noted "bronze examples" of coffins from Susa in the plural. Soon afterwards Rémy Boucharlat (1994: 219, 226) related Morgan's find of "*deux sépultures 'princières' dans des sarcophages en bronze"* , one with rich furnishings, the other empty; both deposited in an unbaked brick vault. A decade later John Curtis (2005: 37) similarly stated that two bronze coffins, one with a richly equipped interment and the other empty, were found in a vaulted tomb. More recently, Wouter Henkelman (2012: 953) made reference to two bronze coffins found by Morgan on the south side of the Acropole, also specifying that one was empty. Like Amiet (1988), Constance Frank (2010: 364) relayed Morgan's recovery of the ivory comb with a second coffin "*du même type*" found in proximity to the first coffin "*à 4m au sud d'un édifice de plan carré*". Frank directed

the reader to Amiet (2010: 358) in the same volume, where an image of the comb is captioned with a reference to its discovery by Morgan in a bronze coffin on the Acropole during *not* the 1901 season, but rather that of 1905-06.

(Re)-discovering the Second Bronze Coffin

After this trail of unfruitful clues in the search for the original source of these reports, the present authors finally uncovered a single publication, unmentioned in previous scholarship, which confirms the existence of a second coffin and provides details of its discovery. In a short 1906 report entitled "*Résultats de la neuvième campagne de fouilles de la délégation du Ministère de l'instruction publique en Perse*" destined for the *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres* (50e année, N. 4), Morgan (1906: 275-81) reports his recovery of a second bronze coffin, indeed during the 1905-06 season:

> "*From the Achaemenid era, we have encountered a burial of a young girl whose skeleton rested in a tub of bronze analogous to that which you can see in the* salle susienne *of the Louvre. An ivory comb enhanced with gold constituted the only funerary furnishing of this burial, and we could only obtain it in fragments. In any case, this comb, ornated with lions in gold repoussé, has left us some very beautiful remains.*"

Oddly enough, after this fascinating insight into a second elite Achaemenid bronze coffin burial Morgan seems never to have published anything more about it. And while the comb has long been on display in the Louvre Museum with a label accurately reporting its discovery in 1905-06, its remarkable origin has evidently been forgotten.

Although confirming the existence of the elusive second coffin and its association with the comb, on certain important points Morgan's 1906 publication contradicts prior reports. It reveals that the standard citation of Morgan 1905 as the source of information on the second coffin is not only incorrect, but anachronistic since it was only discovered in the 1905-06 season. Hence the two coffins could not have been found together as is sometimes reported. Nor are they even likely to have been located in the same general area since they were excavated 4-5 years apart and by 1905-06

the area of the first coffin find would already have been well cleared. Morgan himself certainly makes no suggestion of any physical association between them. Mecquenem (1943-44: 138) *may* therefore have been correct in asserting that it was found in the vicinity of fragments of a stele of Hammurabi, though it is not clear which stele was meant. The object in question could be either the well-known Hammurabi stele found in three pieces during the 1901-02 excavations by Gustave Jéquier in trench 7α (Lampre 1900: 104, fig. 167; Jéquier 1968: 170), or alternatively, and perhaps more likely, near the three inscribed basalt fragments of a *second* example of the Hammurabi "laws" found in the same 1905-06 excavation season (Morgan 1906: 279).[7] Since the location of the latter copy is not stated, an alternative position for the second coffin cannot be offered [a location near the original Hammurabi stele is marked only hesitantly in our Pl. 1].

No other contextual details for the coffin were provided in Morgan's brief summary of the find. He proposed that the first coffin was placed in a tomb chamber; a practice further attested outside of Susa in the late Neo-Elamite tomb chambers near Arjan and Ram Hormuz (near the village of Jubaji), which housed bronze coffin interments of a male and two females respectively.[8] While he makes no such remark for the second coffin, the possibility cannot be ruled out.

Perhaps the most significant detail to emerge from Morgan's report is that the second bronze vessel was neither empty, nor contained only a comb as had been previously indicated. In fact it had housed the skeletal remains of an individual thought to be a young woman; one who must have belonged to an elite family if we are to judge by her gold and ivory

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[7] The primary exemplar of the Hammurabi law code is the black basalt stele unearthed at Susa in three fragments during work conducted in 1901-2, now housed at the Louvre Museum (Sb 8). The discovery of the first two fragments may have taken place in mid-December 1901 (Jéquier 1968: 164); while the third fragment was found in February 1902 (Jéquier 1968: 170). In his report on the discovery in MDP 7 (1905: 29), however, Jéquier indicates that the monument was instead found in January 1902 broken in three pieces inside a small room filled with rubble. Based on additional fragments bearing the same inscription found before 1908 — at least three reported by Morgan (1906: 279) — J. Nougayrol (1958: 150) concluded that three copies of the stele had existed at Susa. B. André-Salvini (2003) suggests that in fact there may have been up to four copies.

[8] For a detailed publication of the Arjan burial see Álvarez-Mon (2010) and for the Ram Hormuz burials see Shishegar (2015). A study of the bronze coffin burials can be found in Wicks (2015).

comb and interment in a large bronze burial container. Mecquenem's assertion that the vessel had been discovered overturned ("*renversée*") suggests that the burial had been disturbed, corresponding well with the presence of a body with only a comb and no accompanying jewellery or funerary vessels. Perhaps Morgan's description of the skeleton as resting ("*reposait*") in the coffin is not to be taken too literally as a description of the actual condition of the find.

Recreating the Pair of Bronze Coffins

A final, tangible, resolution to our mystery lies in the Louvre Museum where we have (re-)discovered not just one, but two bronze coffins in storage. Here they are published together for the first time to facilitate further study of Achaemenid bronze industries and the poorly known subject of Achaemenid funerary practices. The label "*Coffin 1*" has been applied to the first example found in 1901 and "*Coffin 2*" to the second found with the comb in 1905-06.

Coffin 1 [Pl. 2] (Pézard & Pottier 1913: cat. no. 268; Louvre inventory no. Sb 132).[9]

The coffin of the "*tombe princière*" was found broken into "*divers morceaux*", its walls crushed by the earth and debris of fragmentary bricks, but Morgan (1905: 36-37) judged that it had been originally manufactured from a single piece of bronze. In an aquarelle reconstructing the burial as viewed from above, the vessel is depicted as a single piece with a number of cracks and small chunks missing from the rim, and in a side-view sketch indicated several breaks repaired with clamps.

In its reconstructed form, the vessel is basically rectangular with slightly rounded corners. It stands 56 cm high and is broader at its opening than its base, measuring 165 cm in length at the rim tapering down to a 129 cm base, and 96 cm in width narrowing to a 66 cm base. The rim folds outwards to form a flat surface which could have supported a lid. Morgan (1905: 38) indicated that he was unable to detect a metal cover, but this does not preclude the use of a cover of degradable material.

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[9] Coffin Sb 132 appears twice in the former museum register for the "*Antiquités de Susiane*" as AS 3069 and AS 6056.

This coffin was exhibited in the Louvre soon after its discovery, as Morgan had mentioned in 1906, and remained on display until the 1970s.[10] During this time it required numerous restorations,[11] and the recurrent breaking of the walls ultimately led to its removal from the museum showrooms. Today it is composed of about a hundred fragments, but the flat base is preserved in its entirety and still evidences the typical rectangular shape with rounded corners. Surviving parts of the rim measure up to 11 cm in width, confirming the accuracy of the depiction of a broad rim in the watercolor reconstruction. Various types of repairs are today visible in the fabric of the metal including the two stitches along a vertical break shown in Morgan's sketch [see Pl. 2]. The metal composition has not yet been analyzed.

Coffin 2 [Pls. 3 and 4] (Pézard & Pottier 1913: cat. no. 269; Louvre inventory no. Sb 6729 = A 7159).

The inclusion of the second coffin in Pézard and Pottier (1913) indicates that it was on display for a period after its arrival in France at the beginning of the 20th century. It preserves its original shape: a rectangle with slightly rounded corners and outward sloping walls. Its form is comparable with *Coffin 1*, but it is slightly smaller, standing 51 cm high and measuring 142 cm in length at the rim tapering down to 115 cm at the base, and 74 cm wide at the top tapering to 53 cm at the base. The poorly preserved outward-folding flat rim is much narrower, measuring between 3.2 and 3.9 cm wide.

The tub was produced by hammering metal sheet of ca. 5-8 mm thickness, which according to the results of composition analyses contained approximately 12% tin and no lead.[12] Unlike the proposed method of production for *Coffin 1*, this vessel was evidently not formed using a single sheet of metal. A slightly irregular raised line running vertically up the center of both short ends instead suggests that the walls were fashioned

[10] It is specifically mentioned in the museum guides by Rutten (1934: 71-72), Parrot (1947: 50) and Amiet (1971: 89), but does not appear in Amiet 1978.

[11] According to internal museum records one of the bronze coffins "*en forme de baignoire*" was restored in 1956, but the inventory number was not specified. Because it was described as "*très détérioré*" it probably refers to Sb 132 (*Archives des Musées Nationaux,* B16*, devis demandés à la maison André*, 12/09/1956).

[12] Technical analyses and observations by Loretta Rossetti, Christian Degrigny and Gilles Baron (*Laboratoire Arc'Antique*, Nantes).

from two separate sheets [see Pl. 4]. This would have been achieved through brazing (hard-soldering) using a filler alloy with a slightly lower melting point,[13] which would explain the uneven raised lines. The base too may have been separately joined. This coffin was subject to restoration between 1997 and 2001.

Comparisons with Neo-Elamite Bronze Coffins [Pl. 5a-b]

Only three other bronze coffins from Iran with archaeological provenance have been published; one containing a male interment in the tomb near Arjan and two containing female interments in the tomb near Ram Hormuz. The Arjan coffin [Pl. 5a] measures 132 cm long × 60 cm wide × 60 cm high and the damaged Ram Hormuz coffins [Pl. 5b] stood 57 and 63 cm high, and probably measured ca. 65 cm wide × 135-137 cm long, making them all roughly the same size as those from Susa.[14] Rather than a rectangular body with outward sloping walls, however, these slightly earlier examples have a distinctive U-shape with upright walls linking them to a ca. 8th-7th century Mesopotamian coffin type attested at Nimrud and Ur.[15] In these U-shaped coffins the corpse was tightly flexed on one side with the head in the rounded end, rather than the supine position reported for *Coffin 1*.

Like the Mesopotamian examples, the walls of the Arjan coffin were formed using two separate sheets of bronze; one curved, the other squared.[16] These were placed together to form an enclosed U-shape and the vertical joins on the long sides covered with cast bronze side-strips on the internal

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[13] P. R. S. Moorey (1999: 216-17, 229-30, 274) has assessed that welding of copper and copper alloys was not used in antiquity. Any joining of these metals had to be done mechanically (e.g. riveting) or by brazing (hard-soldering) with a high-strength alloy of a slightly lower melting temperature, which formed molecular bonds with the joined surfaces.

[14] For measurements see Álvarez-Mon (2010: 26) and Shishegar (2015: 12-13).

[15] Three coffins containing numerous interments (mostly secondary) were found with an array of rich grave goods in the Tomb III antechamber at Nimrud (Hussein & Suleiman 2000: 113-28), another two were deposited in small chambers near the *giparu* at Ur (Woolley 1962: 53, 56, Pls. 16-18). An empty vessel of the same type was found in room L6 at Zincirli (Andrae & von Luschan 1943: 118-19, 171, Taf. 57). Curtis (1983) dedicated an article to the study of these unusual coffins.

[16] In an examination of the microstructure of the Arjan coffin, Vatandoust (1999: 139) discerned a two-phase alloy with regular grains, cast and then hammered down into metal sheet. The sheet was then cold worked and annealed into the necessary form for the coffin.

and external surfaces. A single row of rivets was inserted along each side of the strip to secure and stabilise the assemblage. A third U-shaped base sheet was joined onto the lower walls by two zig-zagging rows of rivets and another double row of rivets fastened an out-turned rim along the top of the walls. A U-shaped bronze sheet lid with lotus and bud decoration was made to rest atop the flat rim surface, and at either end of the coffin, just below the rim, a pair of cast bronze vertical handles were added. Testing of the composition of the sheet bronze by Abdolrasoul Vatandoust (1999: 139) revealed an alloy containing 11.96% tin and 85.36% copper, with various trace elements making up the remainder. As we have seen, a similar level of tin was determined for *Coffin 2* from Susa. This high tin content would have endowed the vessels with a golden-yellow colouring in their original state.[17]

While sharing the straight-walled U-shape form, the Ram Hormuz coffins exhibit two slight differences in their manufacture. Firstly, rather than being fashioned by hammering a single bronze sheet into the appropriate shape, their squared ends are made from three separate sheets held together at right angles by riveted vertical corner-strips. Secondly, the body is fitted with a total of eight handles — two on each face — all vertically mounted except for two placed horizontally on the short, straight end.

The almost rectangular shape, sloping walls and an absence of handles lend the Achaemenid examples a rather different appearance, and their manufacture without the use of rivets represents a significant departure from the production of the U-shaped coffins, perhaps reflecting technological advances in bronze working. In spite of these differences, the two coffins undoubtedly represent an extension of a late Neo-Elamite elite mortuary practice down into the Achaemenid period.

Notes on the Ivory and Gold Comb

The exquisite comb of ivory and gold [Pl. 6a-d] (Pézard & Pottier 1926: no. 370 bis; Louvre inventory no. Sb 9095 = AS 15363) was the only grave good retrieved from the second coffin with the skeleton of the "young girl". According to Morgan (1906: 276) it was found in fragmentary condition, but still preserved ornamentation of gold repoussé lions.

[17] According to Fleming *et al*. (2006: 35) a content of 12%+ gives a golden yellow appearance.

It would be another twenty years before Pézard and Pottier reported the existence of these comb fragments in the second edition of their Louvre catalogue — "*for a long time we kept these remains in a box without being able to take advantage*". They refer to the 1924 restoration of the 14.5 cm high × 10.5 cm long comb by M. G. Le Batard,[18] describing it as "*one of the most beautiful objects found in the excavations of M. de Morgan*".

Two decades later when Mecquenem (1947: 86-89, figs. 55-56) discussed a group of Achaemenid ivory combs found during his 1935 excavations in the Donjon he neglected to mention this comb, even though it shares similar characteristics with his examples. All have a decorated rectangular central panel and a single row of teeth extending out from each long side; fine on one side, thicker on the other. Some samples preserved decorative borders along their short sides, which could have been covered in gold and painted (Amiet 2010: 360; Daucé 2011, Pls. 16, 18 and 19). On Sb 9095 this border terminates in animal heads.

The comb was discussed for the first time in detail in Amiet's 1972 study of the Achaemenid ivories found at Susa (Amiet 1972: 180-183, figs. 14, 15). According to the restoration made in 1924, the rectangular central panel was framed by 46 rosettes: 32 along the long sides (16 on each side) and 16 along the two short sides (8 on each side). Each rosette, comprised of 10 petals converging on a tiny central gold disk, is encircled by a fine ring of gold. The gold sheet covered ivory borders on the short sides of the central panel are marked by a sequence of 12 elongated "petals" or "tongues" similar to those seen along the inner edge of parapets lining the staircases of, for instance, the Council Hall at Persepolis (Schmidt 1953: 114, fig. 53; Amiet 1972: 182, n. 1). The end of the comb's "parapets" are guarded by the heads of animals with ears flattened backwards [Pl. 6b]. On one of the heads where the gold has been lost [Pl. 6c] the exposed ivory shows a clear line of hatching representing a band of hair going from the ear to the chin, which to Amiet (1972: 182) appears as a collar of curls. One of the gold-covered ivory heads also preserves a curl under the chin [Pl. 6a]. This distinctive hairy collar is a

[18] The present reconstruction of the comb was completed by Le Batard who laid the fragments on plastiline (Pézard & Pottier 1926: 149). The plastiline paste was removed in 1955 and a wooden support provided. In 1997 the increasingly degraded main part of the figure of the lion was restored.

characteristic stylistic feature in representations of animals such as goats, lions, and bulls in Elamite and Persian arts (Álvarez-Mon 2010: 259, Pls. 74, 76). The hairy band can be traced back at least to the end of the second millennium BC (Amiet 1966: 434, fig. 331), but the addition of the curl is a conspicuous feature of the late Neo-Elamite period (Amiet 1966: 507-508, figs. 382, 383; Álvarez-Mon 2010, Pls. 74, 107, 110).

Amiet (1972: 182) interprets the animal as a dog, but the combination of facial features — long pointy ears, narrow muzzle, protruding arched eyebrows, round eyes, hairy collar and lack of horns — is more suggestive of a young bovid. Gold bracelets mounted with removable terminals representing horned caprid heads (goats or antelopes?) were among the finds in the Ram Hormuz tomb chamber [Pl. 7a] suggesting that this style of ornamentation was also fashionable in the later years of the Elamite kingdom (Álvarez-Mon 2012: 468; Shishegar 2015: 154-55).[19] While similar bracelets became signs of distinction on the wrist of the Persian archers from Susa [see Pl. 7b], the closest analogy comes from the Egyptian statue of Darius which represents the Great king wearing a pair of bracelets with animal head terminals. Judging by the one encircling his left wrist, the animals may have been young bovines [Pl. 7c] (Yoyotte 2010: 261; after Stronach 1974: 62, fig. 24 and Pl. XXVI).

Also amongst the comb fragments were remains of two ivory figurines, one human, the other animal, which were restored facing each other in the middle of the comb's central panel [Pl.6d]. The bearded male human wears a narrow band around his head. He is clothed in a garment that has fringed borders and lacks the characteristic folds of the elite Persian robe, which led Amiet (1972: 182) to propose that it is more in line with the Neo-Babylonian style garment. In fact, this garment style is equally at home in the Neo-Elamite world and can be perceived as an archaism in a post-Cyrus context of court style elite garments (Álvarez-Mon 2009; 2011, fig. 44). Returning to Morgan's (1906: 276) comment on the decoration of the comb with "*gold lions* in repoussé"; unless he took the young bovid heads for lions, the second fragmentary ivory animal figurine, whose body could indeed be that of a lion with wings, offers the only other possible reference among the existing fragments. The reconstruction

[19] Numerous gold bracelets and torques with heads of round-horned sheep were found in the royal tombs from Nimrud, but were instead cast as a single piece (Hussein & Suleiman 2000, figs. 121, 122, 118).

of this animal facing the human in a rearing stance was presumably inspired by the "heroic combat with (winged) lions" exhibited in monumental scale in doorjamb reliefs from the palaces of Darius and Xerxes at Persepolis (see, for example: Schmidt 1953: Pls. 145, 196) or, in smaller portable scale, in a comparable scene on another comb from Susa (Amiet 1972: 183, Pl. V. 2a; Louvre Museum Sb 3729). This reconstruction seems to be, however, unwarranted and both figurines may have been part of a group composition whose characteristics are unknown (Amiet 1972: 182-3).

Based on the treatment of the animal head terminals and the presence of a Neo-Elamite garment, this comb could be dated to the very late Neo-Elamite period (ca. late 7th or first half of the 6th century BC); however, the iconography of the heroic combat, the rim decoration recalling the edge of the parapets lining the Persepolis staircases, and analogies with the Darius statue bracelets, advocates for a late 6th century production.

Conclusion

Here we have illuminated a second elite Achaemenid bronze coffin burial, apparently almost unknown to the scholarly community, which offers a valuable addition to the small body of evidence for funerary practice during this period. The presence of the comb suggests that the interred individual was a female as Morgan had proposed,[20] and like the first burial had probably been deposited with other luxury goods that were later robbed from her grave.

With respect to the date of these burials, the interment of *Coffin 1* was placed by Morgan (1905: 57) in the mid-4th century (350-332 BC) based on his assessment of the two coins it contained. His attribution was followed by Pézard and Pottier (1913: 124-25) and subsequently most scholars cited this date. A more recent study by J. Elayi and A. G. Elayi (1992), however, re-dated the coins — and the interment itself — to the last quarter of the 5th century. This earlier date is supported also for *Coffin 2* by its one remaining grave good; the comb, which is considered here to have been manufactured in the very late Neo-Elamite period or early in the Persian Empire, around the time of Darius, although it could plausibly represent a precious heirloom deposited at a later date.

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[20] Combs are generally held to be a symbol of femininity (Ziffer 2002: 654).

The use of metal coffins during the earlier years of the Persian Empire in not only elite, but even royal contexts is hinted at by Arrian (*Anab*. VI.29), who relays a report by Aristobulus that thieves had attempted to rob the "golden" coffin of Cyrus. If indeed there had been such a coffin, perhaps it was actually made of a copper-tin alloy of "golden" appearance. Thus the coffin of Cyrus and our two Achaemenid bronze coffins may belong to a broader Persian elite-royal funerary ideology, which finds its roots in the Neo-Elamite period. It is similarly plausible that such coffins were later deposited in the rock-cuts tombs at Naqsh-e Rustam.[21] Since no other royal Persian funerary sites have yielded grave goods or human remains, these two burials are of great significance for anyone wishing to further comprehend elite Achaemenid funerary practice and religion.

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[21] Behind the façade of the tomb of Darius a funerary complex consisting of a vestibule and three small chambers were cut into the rock. Sunk into the floor of each chamber are three rectangular cists; each of which may have originally received a coffin (Schmidt 1970: 80).

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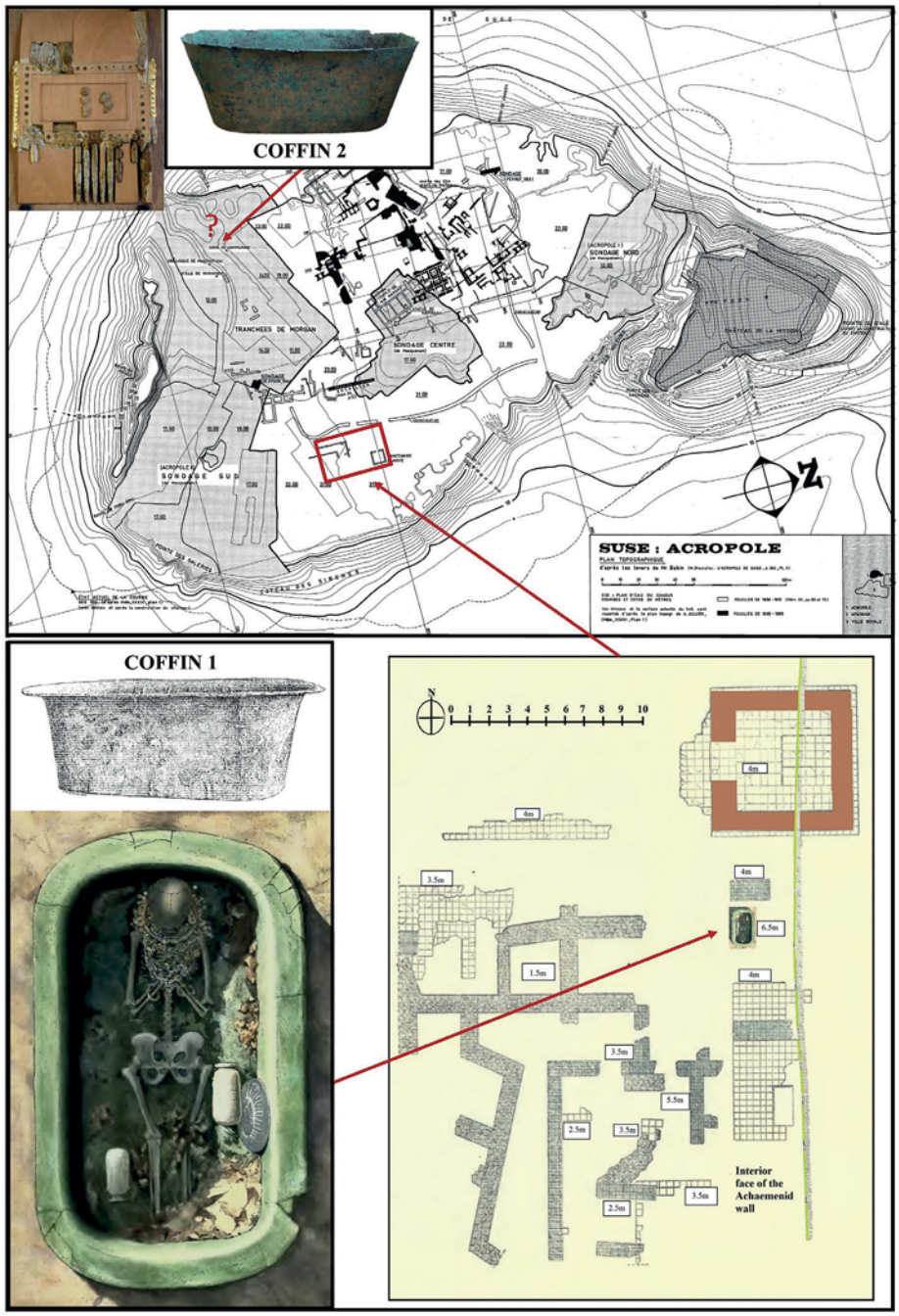
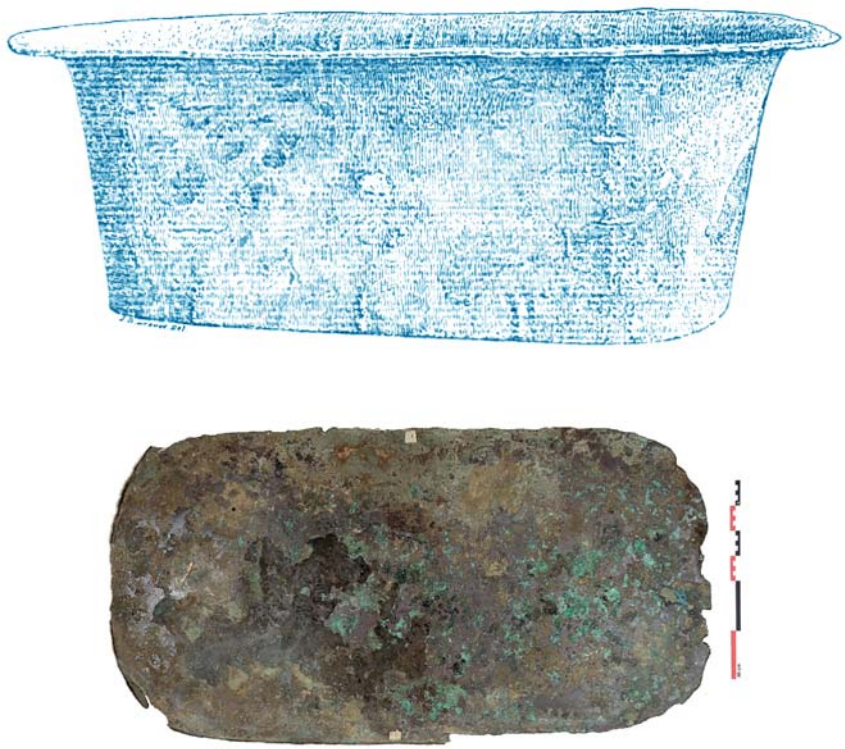


Pl. 1. The Achaemenid coffins and their approximate findspot in the Susa Acropole (topographic plan of the Acropole after Steve & Gasche 1971, Plan 1; *Coffin 2* photograph courtesy of the Louvre Museum; photograph of comb by Álvarez-Mon; plan giving position of *Coffin 1* after Morgan 1905, fig. 66; *Coffin 1* aquarelle and line drawing after Morgan 1905, Pl. II, fig. 67).

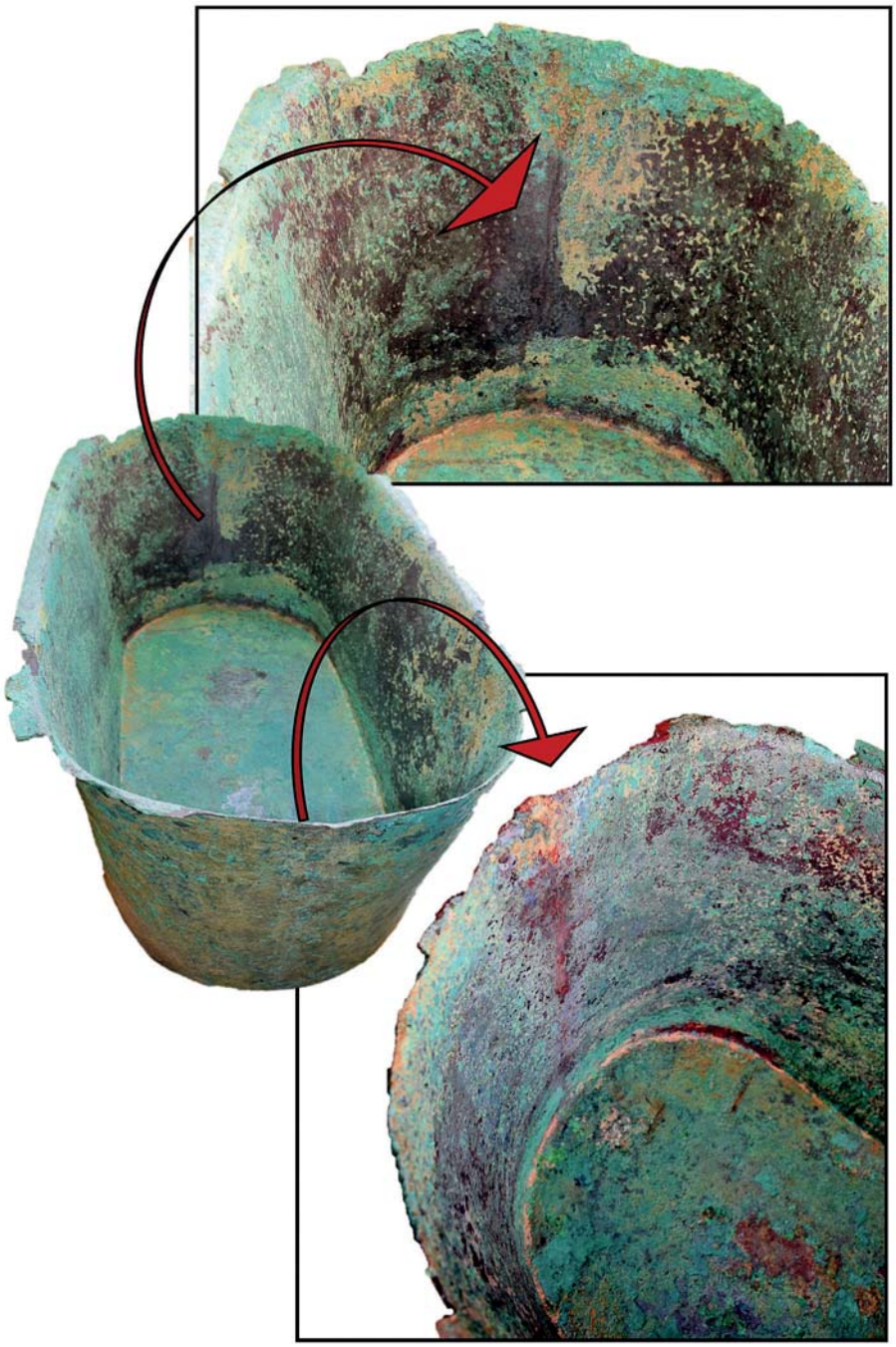


Coffin 1	Discovery Date	Height	Length	Width	Bronze Composition
Sb132 (AS 3069, AS 6056)	1901	54cm	Rim 165cm Base 129cm	Rim 96cm Base 66cm	Unknown

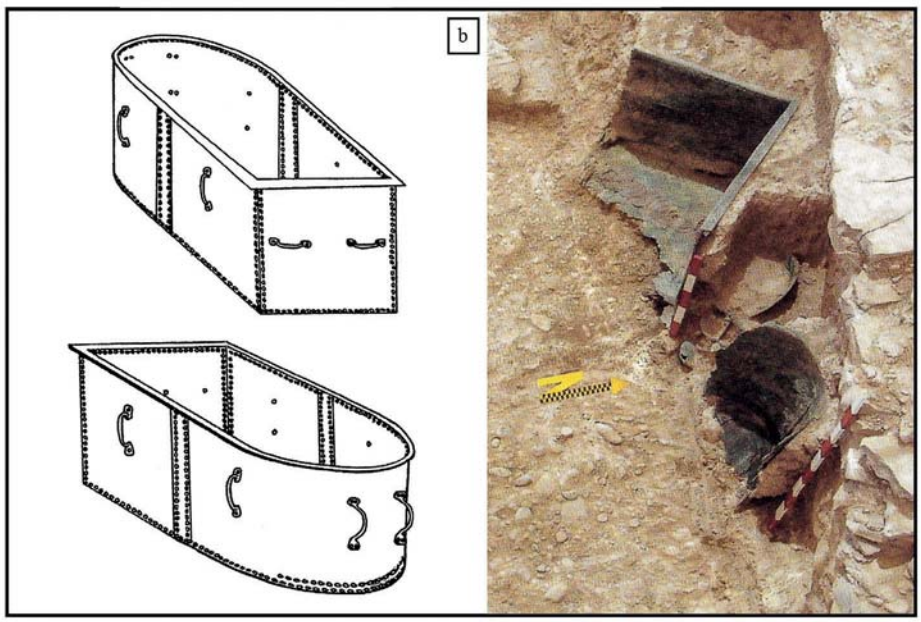
Pl. 2. *Coffin 1*
(line drawing after Morgan 1905: 36, fig. 67; photograph courtesy of the Louvre Museum).

Coffin 2	Discovery Date	Height	Length	Width	Bronze Composition
Sb 6729 (A 7159)	1905-6	51cm	Rim 142cm Base 115cm	Rim 74cm Base 53cm	Approximately 12% tin; no lead

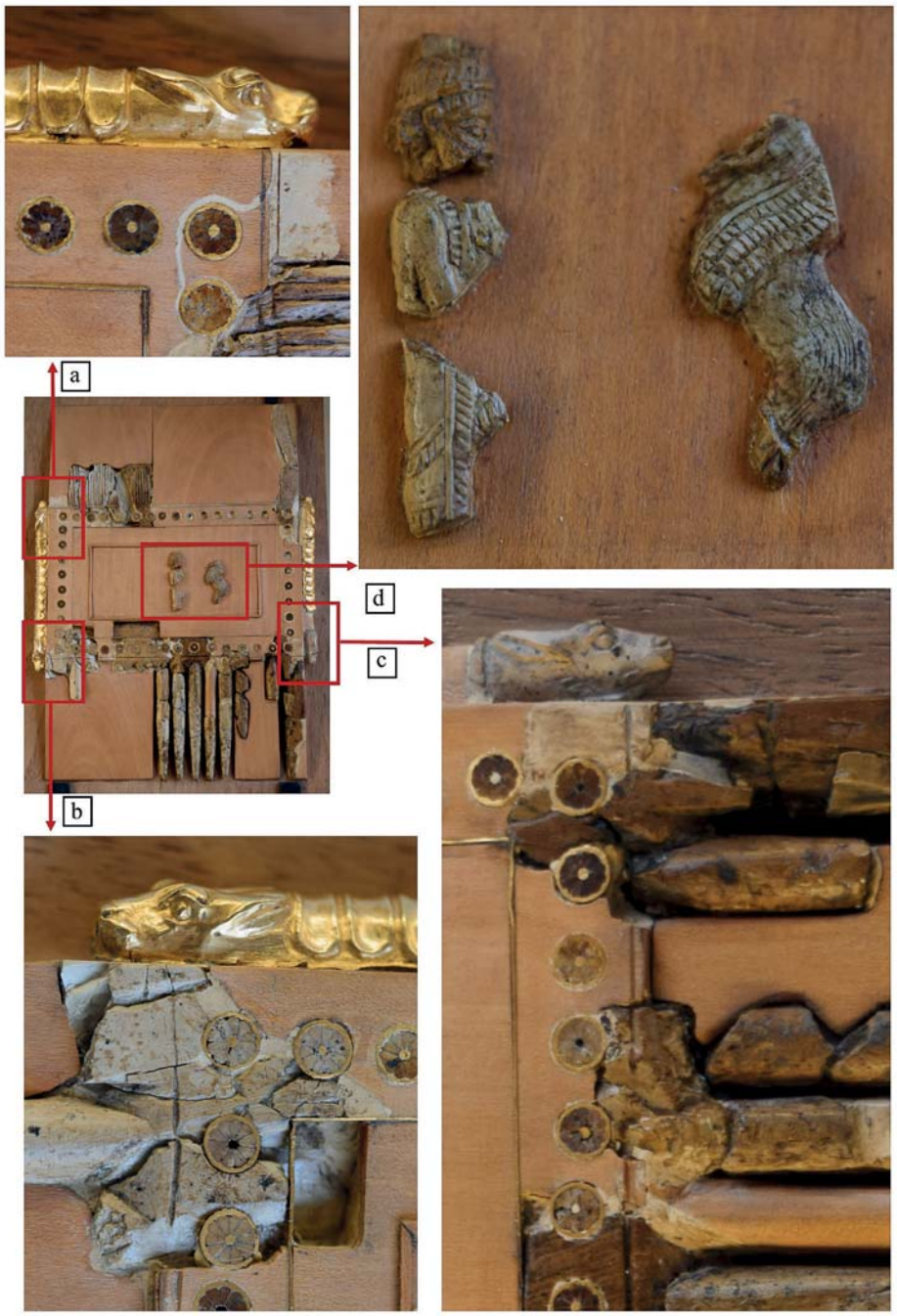
Pl. 3. *Coffin 2* (photographs courtesy of the Louvre Museum).



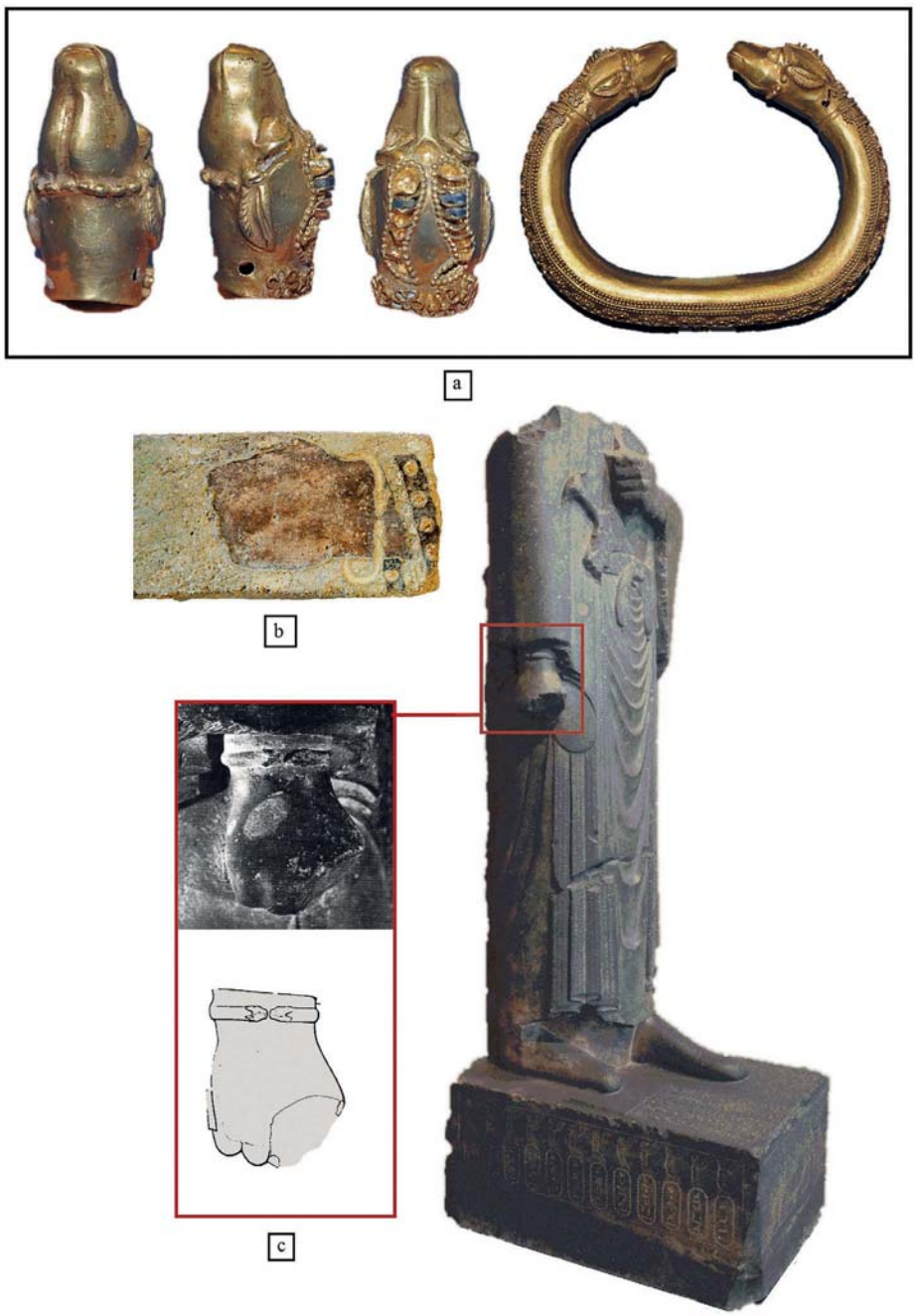
Pl. 4. *Coffin 2* (photographs Álvarez-Mon, courtesy of the Louvre Museum).



Pl. 5. [a] The Arjan coffin (photographs Álvarez-Mon, courtesy of the National Museum of Iran); [b] The Ram Hormuz coffins (line drawings and photograph after Shishegar 2015: Plan 2, colour Pl. 3/17).



Pl. 6. Ivory comb from *Coffin 2* (photographs Álvarez-Mon).



Pl. 7. [a] Bracelet from the Ram Hormuz tomb (photographs Álvarez-Mon, courtesy of the National Museum of Iran); [b] Siliceous glazed brick from Susa representing the hand of an archer with bracelet on wrist (photograph Álvarez-Mon, courtesy of the Louvre Museum) [c] Statue of Darius from Susa (photograph of the statue by Álvarez-Mon, courtesy National Museum of Iran; line-drawing of bracelet detail after Decroix and Ladiray *Cahiers de la DAFI* 4, 1974: 208, fig. 24b; photograph showing Darius' bracelet after *Cahiers de la DAFI* 4, 1974: 242, Pl. 26.1).

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POTTERY TYPOLOGY AND CRAFT LEARNING IN THE NEAR EASTERN HIGHLANDS

BY

Lori KHATCHADOURIAN
(Cornell University)

Abstract: This paper advances an interpretive pottery typology for the northern Near Eastern highlands during early historical periods, or the mid-7th to late 4th centuries B.C. The study represents an effort to integrate intuitive approaches to pottery classification that use vessel form and surface appearance as discriminant criteria with a consideration of craft technology as meaningful social practice. The central Armenian settlement of Tsaghkahovit provides the vantage for these investigations. Nine seasons of excavations at the site yielded a ceramic assemblage that bears upon three phases in the archaeology of the Iron Age: the enigmatic mid-7th to mid-6th century, the early Achaemenid period (ca. 550-430 B.C.) and the last Achaemenid century (ca. 430-330 B.C.). The paper offers an appraisal of pottery typology in each of these phases and examines stylistic shifts through the lens of craft learning. The primary concern is to discern those forces residing within the domain of pottery production that drove perceived typological changes in the mountainous region encompassing what is today northern Iran, eastern Turkey, and the South Caucasus. A catalogue of the Tsaghkahovit pottery corpus is included.

Keywords: Pottery, learning and transmission, Urartu, Median, Achaemenid, Tsaghkahovit.

Introduction

Advances in ceramic analysis over the past half century have tacitly elevated the importance of typology for the study of ancient pottery, even as the appetite for typological approaches in archaeology has waned. While often dismissed as an oldfangled preoccupation of the discipline, pottery typology arguably bears a heavier burden in archaeological interpretation than ever before. If the culture historical approaches of old fettered the value of classification to the plodding progression of normative cultures, and the New Archaeology looked to typologies to understand the functionality of pots within socioeconomic systems, archaeological orientations of

more recent decades have put typology in the service of illuminating infinitely more heterogeneous past worlds. Typologies are quietly implicated in everything from the social dynamics of technological production and the practices of potters who make choices within a field of cultural and material constraints, to the socio-political relations of consumption, and the material entanglements that make human existence possible.[1] On the one hand, the increasing sophistication of ceramic analysis as both science and anthropology brings into stark relief the limits of traditional typology, with its disregard for the sociality of craft technologies. On the other hand, typologies—whether intuitive or statistical—undergird pottery analysis as a foundation for virtually any analytical or interpretive inquiry into the ceramic life cycle that is grounded in time and space.

This condition of typology's irrelevant necessity poses a challenge for ceramic analysis in contexts around the world where material chronologies are still rudimentary. In such circumstances, it is especially difficult to detach the scientific and social analysis of production or consumption from fundamental typological concerns. Is there a place, then, for basic typological research in contemporary archaeology, and if so, what form should it take? While ever-evolving computational approaches offer methodological advances that bring greater sophistication to classification (e.g. Gilboa et al. 2004), they leave unresolved the question of how basic research of this sort can be responsive to the interpretive developments in ceramic analysis over the past several decades. Typology thus remains a poster child for traditional archaeology, and an all too easy target of critique: "[I]nstead of sitting with gritted teeth through yet another exposition of Hallstatt typologies", Matthew Johnson (2010: 229) farcically writes in his call for the demise of "atheoretical archaeology", a hypothetical seminar speaker presenting on typology should be asked "What is your preferred theoretical framework…?" Johnson here gives voice to an ambivalence about the place of typology in contemporary archaeology.

The interpretive typology advanced in this paper thus represents an effort to integrate intuitive, taxonomic approaches to pottery classification that use vessel form and surface appearance as discriminant criteria with a consideration of craft technology as meaningful social practice. In particular, my concern is to discern those forces residing within the domain of

[1] On typology and archaeology's shifting interpretive priorities, see Santacreu et al (2017).

production that drove perceived typological changes during early historical periods (mid-7th to late 4th c. B.C.) in the northern Near Eastern highlands—a mountainous region that encompasses the modern states of Iran, Turkey, Armenia, Azerbaijan, and Georgia (fig. 1).

Accounts of typological change in archaeological thought sometimes look to macro-scale processes like diffusion or migration flows, which introduce into a given region either new ideas, or a new community of potters (i.e., new lineages of teachers and apprentices), for example in the late precontact American Southwest (e.g. Eckert 2008; Habicht-Mauche et al. 2006). But migration does not appear to have been a major factor in the case at hand. Other explanations of deviations in style emphasize the micro-scalar workings of human agency that allow for innovation within existing craft communities (e.g. Dobres 1999; Hegmon and Kulow 2005). Yet agency-based approaches to technology are more effective at explaining synchronic variability than long-term diachronic change. An account that rests predominantly on the individual potter's capacity for innovation, or her/his openness to diffusionary influence, does not sufficiently explain the wider adoption of styles within the craft. More relevant in this regard is the process of training and the intergenerational transmission of knowledge, the critical locus of social practice where individual innovation can result in techno-stylistic shifts within a "community of practice" (Wenger 1998). It is this work in the area of craft learning (e.g. Minar and Crown 2001; Wallaert-Petre 2001; Wenger 1998) that provides a framework for considering what lies behind stylistic shifts during the mid-to-late Iron Age in the northern Near Eastern highlands.

The archaeology of the mid-first millennium B.C. in this upland area of the northern Zagros, Anti-Taurus, and Caucasus is still in its relative infancy, and ceramic sequences remain underdeveloped. Despite generations of work by a dedicated few, there simply has not been a convergence of effort when compared to other contexts of research. Moreover, formidable challenges of language, history, and politics create unfavorable scholarly conditions that impede the kinds of international exchange necessary for regional, as opposed to national chronologies. Pottery sequences thus remain too insubstantial to forsake the tedious work of morphological and stylistic classification, inter-site comparison, and chronometric analysis.

The central Armenian settlement of Tsaghkahovit provides the vantage for these investigations. Nine seasons of excavation conducted at the site between 1998 and 2013 yielded a ceramic assemblage that fits within the

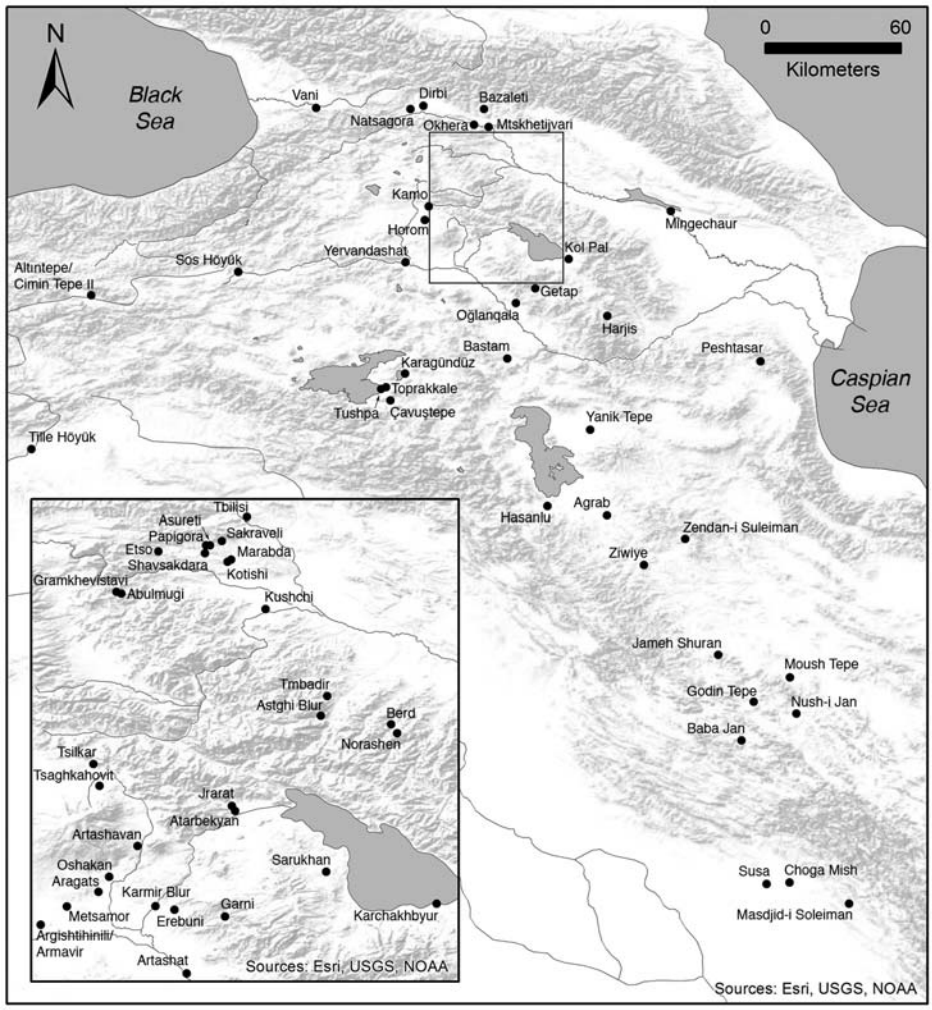

Fig. 1. Map showing most sites mentioned in text
(created by Lori Khatchadourian and Erin Wright).

prevailing pottery typology for the late 7th to 4th century, and in some important ways, refines it.[2] Tsaghkahovit differs from most of the sites that have long been the focus of research for this period. It is geographically

[2] This research was made possible thanks to the generous financial support of the Social Science Research Council, the National Science Foundation (DDIG #0624877), and the National Endowment for the Humanities. I also appreciate the support of the Institute of Archaeology and Ethnography of the National Academic of Sciences of Armenia.

distant from the central and northern Zagros region (the so-called "Median heartland"), and also somewhat removed from Armenia's Ararat Plain. As a remote mountain village, the site offers the possibility to assess how thoroughly changes in craft production permeated highland societies beyond the fortified centers of social and political privilege where such changes are best discerned. Tsaghkahovit is also notable for its relatively clear chronology, constructed on the basis of both stylistic comparison of highly diagnostic ceramic and other artifact classes, as well as Bayesian analysis of radiocarbon dates (Manning et al. forthcoming). Though not uncomplicated in their own right, these 14C dates allow a fair degree of confidence with respect to the settlement's founding in the second half of the 7th century and its abandonment in approximately the late 5th or early 4th. Directly and indirectly, Tsaghkahovit thus has bearing on three phases in the history of the Iron Age that are gradually coming into view in the pottery record: the enigmatic mid-to-late 7th to mid-6th century, the early Achaemenid period (ca. 550-430 B.C.) and the last Achaemenid century (ca. 430-330 B.C.). In what follows, I offer an extended appraisal of pottery typology in each of these phases, considering how the materials from Tsaghkahovit fit within prevailing frameworks, before examining the phases through the lens of craft learning. A catalogue of the Tsaghkahovit corpus supplements these investigations.

The 7th-6th centuries: "Late Urartu" and the "Median Pottery Tradition"

Differences of opinion surround the history and archaeology of the mid-7th to mid 6th century in the northern Near Eastern highlands. Debate ultimately turns on the contested question of when to date the collapse of the Urartian Empire and where to locate the impact of this political upheaval in material culture patterns. Broadly speaking, scholars who focus on the Urartian heartland around Lake Van and the Iranian regions to the southeast place the demise of the Urartian polity in around 640 B.C., after the reign of Rusa II, on the basis of both epigraphic and archaeological data (e.g. Kroll 1984b; Steele 2007; Zimansky 1995b). Those who concentrate on the archaeology of the Ararat Plain, in contrast, favor a later dating, around 580 B.C. (e.g. Avetisyan and Avetisyan 2006: 79), in keeping with the early chronology of Boris Piotrovskii (1959). The details of the disagreement between the 'view from the north' and the 'view from the south'—which implicate everything from dynastic genealogy to marauding

Scythians wielding tri-lobed arrowheads—are beyond the scope of the present paper (Çilingiroğlu 2002; Derin and Muscarella 2001; Diakonoff and Medvedskaya 1987; Diakonov 1956; Piotrovskii 1959; Zimansky 1995a). My concern is instead to examine the implications of the division for pottery typology.

The two views share some common ground. Implicitly or explicitly, both hold that this enigmatic century was not a time of significant change in the potter's craft. But the priorities of two camps otherwise differ. Adherents to the 'southern view', who see the mid-7th century as a time of dramatic political rupture, approach the materials in this "post-Urartian" period with a concern for discerning change. Written sources as well as architectural evidence that points to the emerging prominence of a group in north central Iran known as the Medes motivate a concern to define the pottery types of this Median phenomenon as a distinct archaeological culture. In contrast, advocates of the 'northern view', who do not recognize the third quarter of the 7th century as a time of state collapse on the Ararat Plain, approach the 7th century not with an eye toward observing stylistic change *within* the Urartian potting tradition, so much as a concern to chart broader cultural developments in the late phase of an enduring Urartian milieu. In recent decades, scholars in Armenia who work on the pottery of this "late Urartian" period have established as the research priority to give attention to the coexistence of Urartian material culture alongside 'local' pottery styles whose origins are to be traced to the early Iron Age or earlier (Lchashen-Metsamor 6), and to identify shifting patterns in the contextual association of these two assemblages. Thus, Haik Avetisyan and Pavel Avetisyan have defined an early phase in the Urartian period on the Ararat Plain (early 8th-early 7th c.), marked by a clear separation of Urartian and local groups, and a later phase (early 7th-last quarter of the 6th c.), in which material culture patterns suggest an intermingling and integration between Urartians and non-Urartians (Avetisyan and Avetisyan 2006: 55-56; see also Yengibaryan 2002). The distinction is temporally fuzzy at the interface, but appears to pivot roughly on the accepted founding date of Karmir Blur in the second quarter of the 7th century (Avetisyan and Avetisyan 2006: 77). The latter phase is discerned through the contextual seriation of the pottery from Karmir Blur with burial assemblages from Oshakan (burial 47), Metsamor (burials 6 and 4) and Artashavan, where Urartian and "local" material culture coexist. In at least one account of the 'northern view', the late Urartian phase as a material culture horizon extends as far as the last

quarter of the 6th century, well into the Achaemenid period in dynastic terms (Avetisyan and Avetisyan 2006: 80). The notion of a century-long "post-Urartu" simply is not compatible with the 'northern view.'

As a proponent of the 'southern view', Stephan Kroll (2014: 205, 2015: 111) has recently identified what he calls the "Median pottery tradition" (MPT) of the late 7th to mid 6th century.[3] While emphasizing broad continuities in vessel morphologies and surface treatments, Kroll defines the MPT as marked by a) three new vessel forms; b) a change in the shapes of bowl rims, whereby wide flaring rims replace in popularity the rounded or bead rim bowls of Urartian ceramics (Kroll 2003: 283, 2014: 205), and c) an increasing prevalence of brown and buff surfaces relative to the still common red-slipped wares that are so characteristic of Urartian pottery (see also Stronach et al. 2009: 192). There is sufficient research to assess the first of these developments at a regional scale, while the other two are considered below in the specific context of Tsaghkahovit, where systematic pottery analysis on a relatively large corpus of data has been possible. Concerning the three new forms, archaeologists working in northern Iran and eastern Turkey appear to support Kroll's MPT, which is to say, they also date vessels of these types to the "post-Urartian" period. In contrast, the forms appear in typologies of Urartian pottery from the Ararat Plain as squarely belonging to the Urartian horizon.

The first of the MPT, which Kroll identified decades ago as a "Median" form (Kroll 1976: 112, type 3), is a bowl with a single horizontal loop handle, found at the "Median heartland" sites of Godin Tepe (Gopnik 2011: type 81), Bastam (Kroll 2013b: Fig. 8, Fig. 9.9, 9.10), Nush-i Jan (Stronach 1978b: Fig. 6), Baba Jan (Goff 1985: Fig. 2.29-33), Moush Tepe (Mohammadifar et al. 2015: Pl. 10, 14), and Ozbaki Tepe (Majidzadeh 2000: Fig. 6.1) (fig. 2).

In Turkey, the horizontal handled bowl occurs in the recently discovered "post-Urartian" phase at Çavuştepe (Sevin 2012). Consistent with this prevailing dating, de Clairfontaine and Deschamps (2012: 118, fig. 17.6) place an example of the form recovered from the recent excavations at

[3] The MPT is a typological concept, albeit one that is sympathetic to the view that the Median horizon represents a kind of colonial expansion from a heartland in northwest Iran (e.g. Roaf 2010). For present purposes I will use Kroll's terminology in recognition of the region where archaeology has first isolated the ceramic tradition, but until greater chronological resolution is on hand, it is entirely unclear whether this constitutes a culturally colonial or politically imperial style.

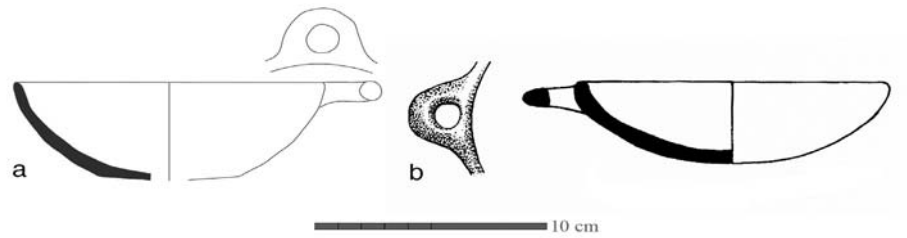

Fig. 2. Bowls with horizontal handles (MPT #1): a. Godin Tepe, type 81 (Gopnik 2011: fig. 7.56); b. Bastam (Kroll 2014: fig. 2).

Erebuni at the end of the 7th century. However, the single-handled bowl is included in the standard catalogue of Urartian pottery types of the Ararat Plain (Avetisyan 1992), reproduced in several subsequent publications (Avetisyan 2001; Avetisyan and Avetisyan 2006), and accepted as an 8th century form.

The linchpin of this dating is the occurrence of the form in a single burial, located on Saryan Street in Yerevan, which Harutyun Martirosyan (1964: 240) dated to the 8th century. His dating of the burial was based in large part on this very form, the only vessel in the inventory that Martirosyan thought did not occur at later Urartian settlements. But subsequent work at Karmir Blur and Oshakan has shown this not to be the case (Avetisyan 1992: 61, fig. 38.07-10). Karmir Blur was founded in the reign of Rusa II and, even after its destruction, Achaemenid-era burials in the lower town point to continued activity at the site (Martirosyan 1961: 137-150). Likewise, the palace and cemetery at Oshakan appear to have been in use into the 5th century with no apparent rupture ("почти без всяких изменений") (Esayan and Kalantarian 1988: 38; see also Herles and Piller 2013). Other 7th century contexts where the form occurs include a jar burial from Nor Armavir (Tiratsyan 2010).[4] In fact, the only possible

[4] This assemblage has been the subject of debate (Kroll 2014: 205, 2015: 111; Tiratsyan 2010). Nvard Tiratsyan dated the burial to the 7th century on the basis of bronze fibulae and Scythian-type arrowheads, but she advanced an "Urartian" dating of the horizontal-handled bowl itself, noting parallels from the putatively 8th century Saryan Street burial and burial #4 at Lori Berd. The example from Lori Berd is quite distinct, with its trapezoidal handle (Devedzhyan 1981: 73; Pl. XXIX.16). Apart from this, Lori Berd burial #4 contained another vessel that Devedzhyan associates with vessels of the 5th century and later, thus precluding an early dating of this example. N. Tiratsyan also notes as comparanda Early Iron Age handled bowls from Metsamor and the Ltsen burial in Sisian. The

8th century context is at Erebuni, but here the devil is in the details; although founded in the 8th century, there is compelling evidence for occupation in the late 7th through 4th centuries, notwithstanding complicated stratigraphy in some areas of the citadel (de Clairfontaine and Deschamps 2012; Deschamps et al. 2011; Deschamps et al. 2012; Ghafadaryan 2010; Khatchadourian 2016; Stronach et al. 2009; Stronach et al. 2010). Therefore, to associate the horizontal-handled bowl with the full sweep of the Urartian pottery tradition would require examples that can be point-provenienced in the early occupation strata at this site.

The second type in Kroll's MPT is a jug with straight vertical spout (fig. 3). The spout is either pinched or rounded, and either approaches the rim or narrows as it extends diagonally off the shoulder. Kroll looks to examples from Godin Tepe (Gopnik 2011: 326, fig. 7.30, 7.59), Bastam (Kroll 2013b: Fig. 9.8), and Nush-i Jan (Stronach 1978b: Fig. 8.1, 2) in Iran, Çavuştepe, in Turkey (Sevin 2012), as well as Horom, in Armenia (Kohl and Kroll 1999: fig. 6.1) to date the form to the late 7th–6th century. According to the 'northern view', the form is characteristic of Urartian ceramics of the Ararat Plain, but uncommon ("немногочисенная группа") (Avetisyan 1992: 57-58, Pl. 28.2-3, 29.1). Once again, the indicated examples in H. Avetisyan's typology are either from 7th century sites (Karmir Blur), or sites with occupation in the 7th century and beyond. Two red-polished examples from the Ararat Plain were recovered from burial 25 at Oshakan, which the excavators date to the first half of the 6th century, in part because of these very jugs (Esayan and Kalantarian 1988: 69-77). Indeed, there appears to be a consensus around a later dating of burial 25 to the 6th century, and possibly even the late 6th century (Avetisyan and Avetisyan 2006: 79-80; Avetisyan 2009: 60, 68; Herles and Piller 2013: 207; Kroll 2003: 283). An example from Erebuni recalls a jug from Godin Tepe, with its buff fabric covered in a cream slip (Gopnik 2011: 7.59.6). The form is more common to Achaemenid contexts, occurring at Persepolis (Schmidt 1957: fig. 73.2), Susa, Choga Mish (Delougaz

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Metsamor horizontal handled bowls are quite distinctive, with a circumferential indentation below the rim, often incised decoration on the body, and thicker handles that grow out of the body rather than affixed loops (Khanzadyan et al. 1973: 172, fig. 165, Pl. XXXV.5, Pl. XXXVI.5, Pl. XXXVII.8,9). The Ltsen vessel also differs from type 1 of the MPT with its triangular shaped handle (Martirosyan 1964: 151, fig. 61.5). Surface treatments and fabrics, though not always described, likely also differ between Early Iron Age horizontal-handled bowls and the MPT type.

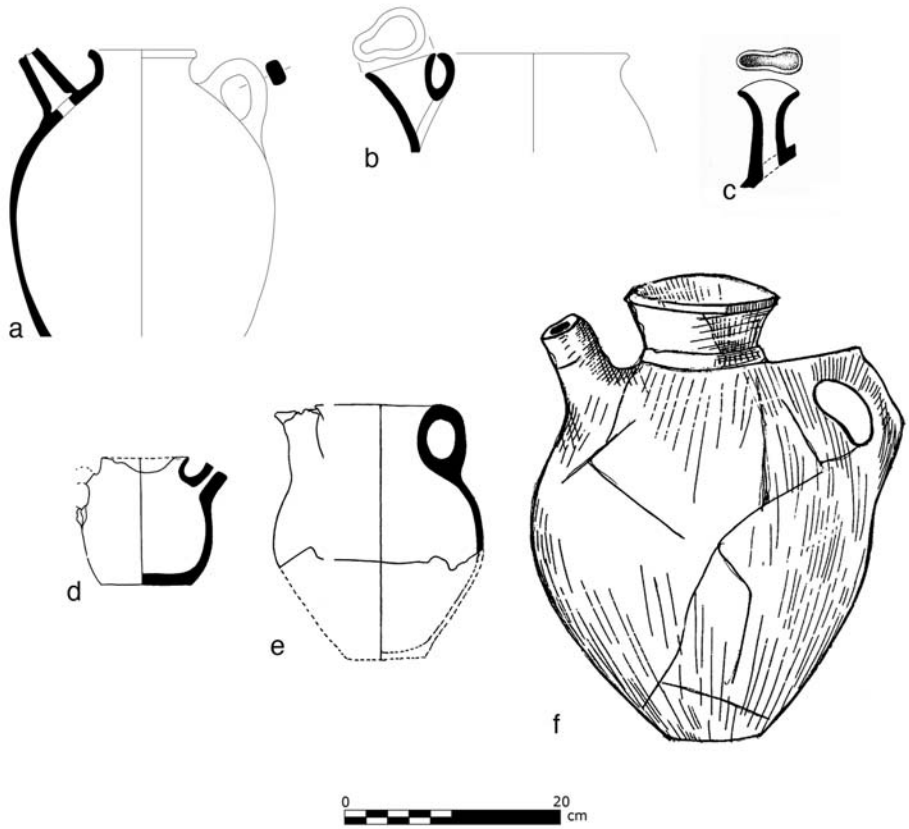

Fig. 3. Jugs with vertical spout (MPT #2): a-b. Godin Tepe (Gopnik 2011: fig. 7.59); c. Bastam (Kroll 2014: fig. 2); d. Jrarat (Karapetyan 2003: fig. 27.5); e. Karchaghbyur (Karapetyan 2003: fig. 27.4); f. Armavir (Karapetyan 2003: fig. 27.1).

et al. 1996: 14), and such sites in Armenia as Armavir, Karchakhbyur, and Jrarat (fig. 3d-f) (Karapetyan 2003: Pl. 27; Tiratsyan 1964a: fig. 2).

The third type in Kroll's MPT is the "slim doubled-handled jar", usually red slipped and polished, and occurring in a range of sizes (fig. 4). Kroll once again looks to the evidence for a late 7th-6th century date from stratified contexts in northern Iran and the Van region, at Bastam (Kroll 2003: Fig. 1.1, 2013b: Fig. 9.12), Godin Tepe (Gopnik 2011: Fig. 7.32), Baba Jan (Goff 1985: Fig. 9.22), and burial 140 on the mound to the north of the Tushpa citadel (fig. 4a-b) (Herles and Piller 2013: 214; Sevin 1994: 221; Tarhan 1994: Fig. 17). But following a long tradition, several Armenian

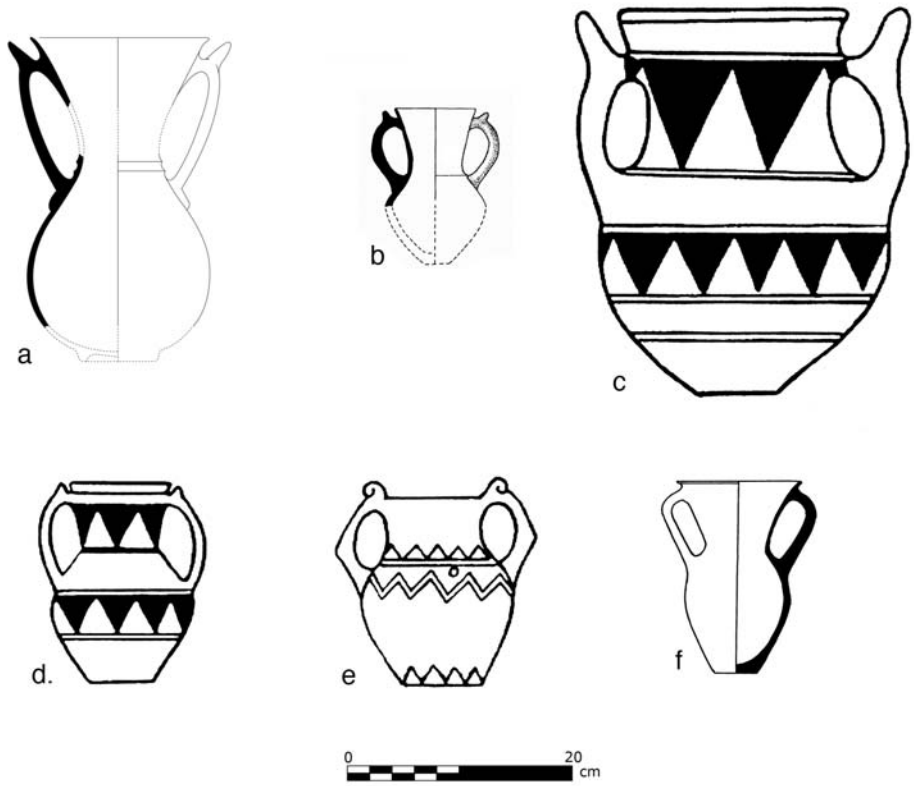

Fig. 4. Double-handled jar (MPT #3): a. Godin Tepe (Gopnik 2011: fig. 7.60); b. Bastam (Kroll 2014: fig. 2); c. Argishtihinili (Avetisyan 1992: fig. XLV.2); d. Erebuni (Avetisyan 1992: fig. XLV.3); e. Harjis (Avetisyan 1992: fig. XLV.11); f. Karchakhbyur (Karapetyan 2003: fig. 19.1).

archaeologists adhere to an Urartian origin for the form (Avetisyan 1992: 68-72; Martirosyan 1964: Fig. 103; Tiratsyan 1964b, 1978b, 1988: 38; Tiratsyan 2010), even as they recognize its continued production into subsequent centuries (Esayan and Kalantarian 1988: 71; Hmayakyan 2002: 287; Martirosyan 1961: 139-40, Fig. 140; Tiratsyan 1988: 37, Pl. III.1). Avetisyan delineates two subclasses, the first having a wide lower body and the second a narrow, elongated body. Neither is common ("небольшая группа", "немногочислены") (Avetisyan 1992: 68). He places the inception of the form in the 8th century on the basis of the above-mentioned Saryan Street burial, which contained a fragment of a handle with characteristic vertical

protrusion.[5] But it is now clear that this isolated burial can no longer be regarded as a specifically 8th century assemblage.

None of the ceramic examples from Avetisyan's limited type point conclusively to an 8th century date (fig. 4c-e). Notably, the highest concentration of vessels in his catalogue belonging to this general type appears to be from Oshakan, a late Urartian (and later) site (Esayan and Kalantarian 1988; Herles 2015). Out of the 31 illustrated examples from Armenia, nine are from Oshakan. Four more are from Karmir Blur, and another four are from Aragats, both 7th century sites. One clear outlier is the two-handled jug from a burial in Zangezur (Harjis) (Avetisyan 1992: Pl. XLV), which the original excavator dates to the 7th-6th century (fig. 4e) (Xnkikyan 2002: 83, Pl. LXXV.17). The vessel is decorated with incised triangles filled with dots, and has spiral bulges at the top of the handle, similar to the spiral handles on a double-handled jug from Çavuştepe that Veli Sevin (2012) assigns to the "post-Urartian" horizon.[6] In other words, 18 of the 31 vessels are from certain 7th century (or later) contexts. The example from the 7th century burial of Nor Armavir can be added to this count (Tiratsyan 2010). More difficult to date are the 11 examples from Erebuni and Argishtihinili. As with Erebuni, Argishtihinili was occupied in both the 8th and 7th centuries, and the excavations of various units established the clear presence of activity into the 6th and 5th centuries (Martirosyan 1974: 55-73). Without specific contextual information on each of the vessels, therefore, it is not possible to conclusively assert an 8th century date for the inception of the double-handled jug.[7] In sum, in light of the form's apparent absence from the 8th century sites of the Urartian heartland around Lake Van, coupled with its relative abundance in the 7th century, the weight of the

[5] There appears to be confusion surrounding this fragment. H. Avetisyan describes it as made of bronze, and thus a prototype for later ceramic imitations. But Martirosyan makes no mention of bronze, describing only a red-orange colored fragment. The two publications also appear to illustrate different vessels (Avetisyan 1992: XLVII.6; Martirosyan 1964: XXIII.18).

[6] Avetisyan seems to derive support for an Urartian-period dating for this vessel from, among other things, the bronze "Skythian-type" arrowhead with which it was found, but this type of arrowhead endures well into the Achaemenid period, both in the imperial heartland and beyond, and cannot be taken as narrowly diagnostic of the 8th or 7th century.

[7] The two remaining examples in Avetisyan's catalog are from Sarukhan and Tazagyugh. I am not able to comment on these, as I could not gain access to relevant literature in time for this publication.

evidence at present does favor the MPT dating of this form.[8] As is well known, the form continues into the Achaemenid period (Karapetyan 2003: fig. 19), with a fine example recovered from a burial at Karmir Blur (fig. 4f) (Martirosyan 1961: 141). It comes to be closely associated with the zoomorphic silver two-handled vessels of the Achaemenid period, with important implications for the later development of the ceramic variants, as we shall see.

In sum, the vessels of Kroll's MPT that are found on the Ararat Plain and neighboring regions likely belong to the 7th-6th century, or what proponents of the 'northern view' would regard as the "late Urartian" period. None of the examples of the MPT forms are from certain 8th century contexts, while many are from contexts where a 7th century date is certain or probable. The introduction of these three shapes in the 7th century represent minor morphological developments in a potting tradition that, on present evidence, appears to have remained largely unchanged across the 8th-early 6th centuries, in terms of most vessel forms, surface treatments, and firing conditions.

Tsaghkahovit, "Late Urartu", and the MPT

Tsaghkahovit is a mountain settlement nestled in undulating terrain on a spur of Mt. Aragats, in north-central Armenia. The most distinctive feature of the village is its semi-subterranean architecture, which likely provided year-round shelter for an agro-pastoral community that favored inconspicuous dwelling. Detailed accounts of the excavations at Tsaghkahovit, conducted under the auspices of the Project for the Archaeology and Geography of Ancient Transcaucasian Societies (Project ArAGATS), can be found elsewhere (Badalyan et al. 2010; Badalyan et al. 2008; Khatchadourian 2008a, 2008b, 2014, 2016). The reconstruction of Tsaghkahovit's Iron Age chronology rests on artifact typologies as well as the Bayesian analysis of radiocarbon dates. Across the settlement, it has been possible to discern a significant Iron Age stratum dating generally to the middle of the first millennium B.C., with more or less substantial Late Bronze Age deposits below. The settlement was occupied without prolonged hiatuses

[8] An 8th century date for the vessels of the MTP found of the Ararat Plain seems particularly unlikely given what is known of Urartu's uniform state assemblage (Zimansky 1995a).

after its initial establishment in the 7th century. As a result, living surfaces were maintained over time without easily discernable stratigraphic levels.

On its own, radiocarbon dating has proven of limited utility. The notorious Hallstatt plateau on the calibration curve produces, at 2σ, a 250- or 350-year determination range around the middle of the first millennium B.C.[9] The analyzed charcoal consisted of small pieces from incidental burning events and collected from a range of contexts—preparatory surfaces beneath floors, floors, hearths, and indeterminate installations. Analysis has not been performed on short-lived organic samples like seeds that might have exited the carbon cycle soon before the site's abandonment.

The dating of the site's abandonment is somewhat easier to resolve than its founding. As will become clear from the ceramics discussed below, occupation during the Achaemenid period is beyond doubt. A *terminus post quem* for the abandonment is provided by a serpentine plate that was recovered *in situ* from the floor of one of the rooms of the settlement. The plate is imported from the Zagros region, and is identical to many chert and serpentine plates found at the treasury of Persepolis that are associated with the reign of Xerxes (486-465 B.C.) (fig. 5) (Khatchadourian 2016: 185-192). Correspondingly, two radiocarbon results run on charcoal samples found from this same final floor surface yielded calibrated dates with the highest probability range (at 1σ) for a felling date extending to the end of 5th century.[10] The same is the case with two other samples from two

Fig. 5. Serpentine plate from Tsaghkahovit, Room G.

[9] A list of radiocarbon dates from the Iron Age settlement that includes all samples run from 2005-2011 can be found elsewhere (Khatchadourian 2014: Table 1). Dates from 2013 and associated Bayesian analysis can be found in Manning et al. forthcoming.

[10] AA72367 (Ar/Ts.WSG.12.C14.05), 2438 +/-34, calibrated 753-407; AA72366 (Ar/Ts.WSG.12.C14.04) 2460 +/- 34, calibrated 758-416.

other rooms, one of which extends into the 4th century.[11] Occupation later than the early-4th century is improbable, although a few sherds provide rare hints at later activity (e.g. Pl. 4.11, Pl. 5.16).

The beginning of Iron Age occupation at Tsaghkahovit is more difficult to define due to the combined handicaps of the plateau on the radiocarbon curve and the broad ceramic continuities of the 8th to 5th centuries. But certain material presences and absences make it possible to tighten the radiocarbon dates and exclude the likelihood of a founding date before the second half of the 7th century. The characteristics of the MPT obtain at Tsaghkahovit. The doubled-handled jug is particularly abundant, and discernable from both sizeable vessel fragments that strongly suggest similar overall morphology,[12] and as many as eight handle fragments with upright nubs occurring in polished reds, browns, and black (Pl. 8-9.26). It is probable that many, if not most, of these examples date to the final years of occupation, when floors may have been less meticulously maintained, but an earlier date cannot be ruled out, except in two instances in which the vessel handles have zoomorphic adornments (Pl. 9.26h-i, discussed below). Less clearly visible at Tsaghkahovit is the jug with upright spout. One example (Pl. 11.29a), with its short neck, is quite similar to the example from Jrarat (fig. 3d). A variety of spout fragments suggest additional such vessels (Pl. 11.29b-e). Only one fragment from Tsaghkahovit approximates the horizontal-handled bowl (Pl. 5.33).[13] At the same time, a great number of vessel types associated with Urartu are not present at Tsaghkahovit. The beer vessels, censers, plates, straight-sided cups and bowls, and strainers are not to be found in the assemblage. And insofar as pottery assemblages from Urartian-era sites in Armenia located beyond the Ararat Plain are often characterized by a preponderance of "local" (Lchashen-Metsamor 6) pottery, also significant is the scarcity of such styles from floor deposits at Tsaghkahovit.

Turning to the other two characteristics of the MPT, the bead rim bowls of Urartian pottery are virtually nonexistent at Tsaghkahovit, while bowls with wide-flaring rims are common (Pl. 1.1, 3.6). Finally, the shift in pre-

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[11] AA95619 (Ar/Ts.SLT13.13.C14.1), 2353 +/- 39, calibrated 728-364.

[12] The upright nubs on the handles of the vessels shown in Pl. 8.26d are artist's reconstructions, and not based on the association of such handles with the neck and body fragments.

[13] The horizontal handled bowl is not common during the Achaemenid period in Armenia. Karapetyan (2003: 38-39, fig. 24.5) offers only one roughly similar example, whose find context is not indicated.

ferred surface colors from reds to browns also seems to hold true at Tsaghkahovit. Of the sherds and whole vessels dating to the 7th-4th centuries whose exterior surface colors could be measured across all types (n=640), 42 percent are in the brown range on the Munsell color chart compared to 25 percent in the red. Looking specifically at bowls and plates (of all types and sizes), red is slightly more common than brown, at 35 percent versus 34 percent (n=261).

Thus, an input into a Bayesian model of a founding date that post-dates 640 B.C. accounts for the absence of material culture associated with the early Urartian period while allowing for the possibility of occupation in the "Median" or "late Urartian" period as a conservative accommodation of the radiocarbon dates that include the 7th century in the calendar year range. The result is a model that produces no outliers (Manning et al. forthcoming). On present evidence, the Iron Age settlement of Tsaghkahovit can be dated from the mid-to-late 7th through early 4th centuries. While the first 50-100 years of this range, associated with the MPT, is based largely on supposition and low-resolution radiocarbon dates, occupation during the early Achaemenid period rests on firm ceramic evidence. It is to this phase that I now turn, focusing particularly on the pottery from Tsaghkahovit in the wider context of Armenia.

The Achaemenid Period

Archaeologists in Armenia have long noted the challenge of isolating an Achaemenid-era ceramic horizon because of broad continuities of form and surface treatment that persist from earlier centuries of the Iron Age. Gevork Tiratsyan (1988: 40) characterized the situation as a "duality" (двойственность) in which kernels of innovation existed alongside a potting tradition deeply connected with the past. Distinctive shapes are relatively few, within what can be recognized as a *traditional sensibility* among potters, who adhered closely to the teaching of their ancestors in the *chaîne opératoire* (Khachatryan 1966: 88; Tiratsyan 1964b, 1978a, 1978b). And yet the ceramic assemblage from Tsaghkahovit, when set in the wider context of pottery styles of the 6th-4th century from elsewhere in Armenia and the northern Near East, makes it possible to discern two significant technological developments. These new approaches did not replace traditional practice, so much as enlarged the scope of the craft during the Achaemenid period. The first development is best described as a *sculptural sensibility*, which manifests in different forms and techniques, and can be

recognized as widespread beginning in the late 6th century. The second development is a *painterly sensibility*, best known in Euro-American scholarship as so-called "Triangle Ware". This latter takes hold no earlier than the 5th century, and likely, at least in ancient Armenia, beginning in the 4th. The typological characteristics of these sensibilities are each addressed in turn.

Potting Like the Ancestors: The Traditional Sensibility

In 2003, Inessa Karapetyan published a pottery typology that synthesized and refined the insights of many decades of scholarship in Armenia. Here I summarize the descriptions of the largest vessel categories in that typology, and the ones for which differences from related shapes of the Urartian tradition are somewhat discernable: *pithoi*, jugs, carinated bowls, and spouted jugs.[14]

There are four *pithoi* types (Karapetyan 1974, 2003: 33-34). The first and largest (diameter 50-100cm) has an everted wide rim that is wavy or straight on the exterior, a short neck, and relief decoration at the shoulder/body junction, sometimes consisting of a cord pattern, other times a rectangular band with incised, parallel lines (fig. 6a-b) (Karapetyan 2003: 33, fig. 12.1, 2, 3, 5, 6). Karapetyan places the form in the 6th-5th centuries on the basis of parallels with forms of the 7th-6th century. Her second type, more common to the Hellenistic period, is smaller, has an outward rounded rim, scarcely a neck, and well-smoothed, sometimes polished brown and red surfaces (fig. 6c) (Karapetyan 2003: 34, fig. 12.4, 13.2). The third has a rounded rim that sometimes turns down to meet the exterior of the shoulder, gray surfaces, with concentric decorative belts descending in intervals down the length of the shoulder (fig. 6d) (Karapetyan 2003: 34, fig. 13.1). The final and most limited type has ridges beneath the neck and vertically grooved handles that are broad and flat in plan (fig. 6e) (Karapetyan 2003: 34, fig. 13.3, 4). Only the first of Karapetyan's four types occurs at Tsaghkahovit, but in smaller diameters (Pl. 12.31a, m), and represented in fragments bearing the rectangular relief band with incised, parallel lines (Pl. 12.31j-k).

[14] For discussion of additional types, as well more detailed description than what is provided below, including references to sites in Armenia and neighboring countries where each of the forms discussed occurs, readers are directed to Karapetyan's publication.

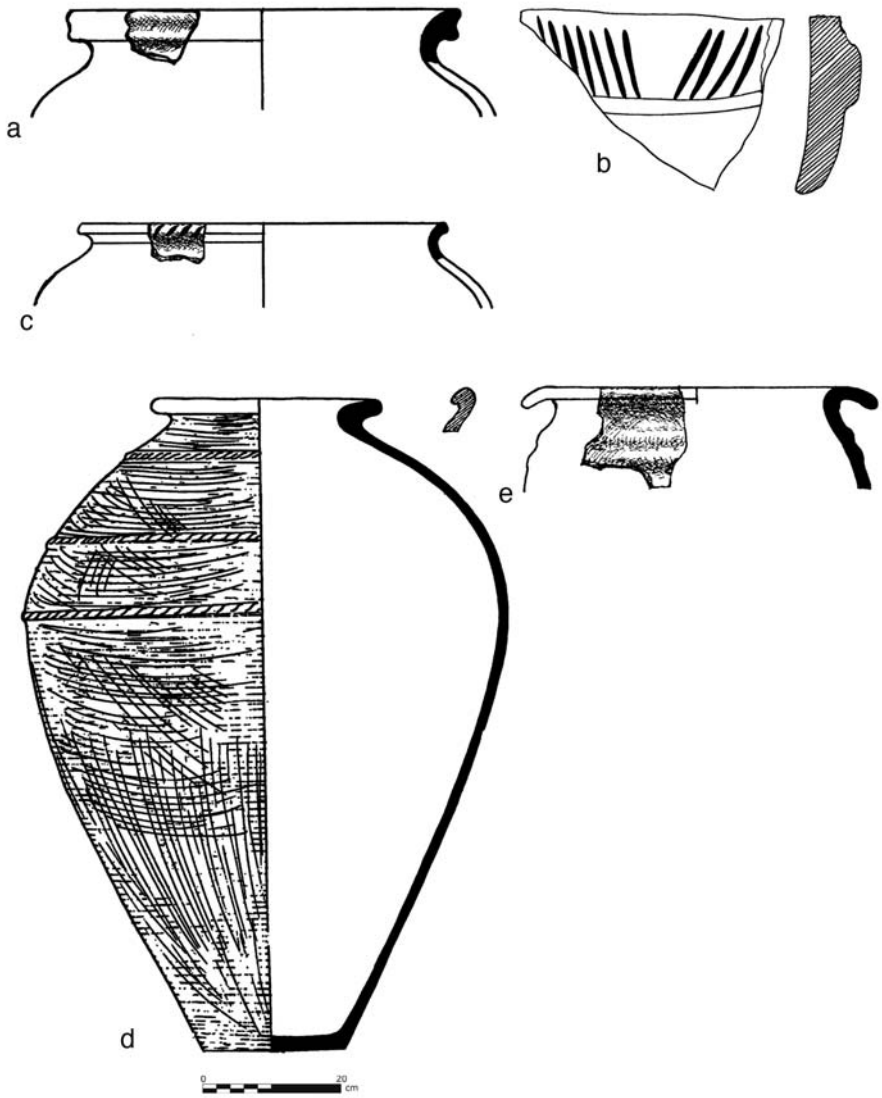

Fig. 6. Examples of *pithoi* of the 6th-4th centuries from Armenia (Karapetyan 2003: fig. 12.2, 12.4-5, 13.1).

The first of six jug groups is distinguished by its bulbous body and relatively long neck, ending in a straight or widening rim, with a bow-shaped handle that joins at or below the rim and on the shoulder (fig. 7a). The form occurs in grays and red-browns. Subtle differences in the length

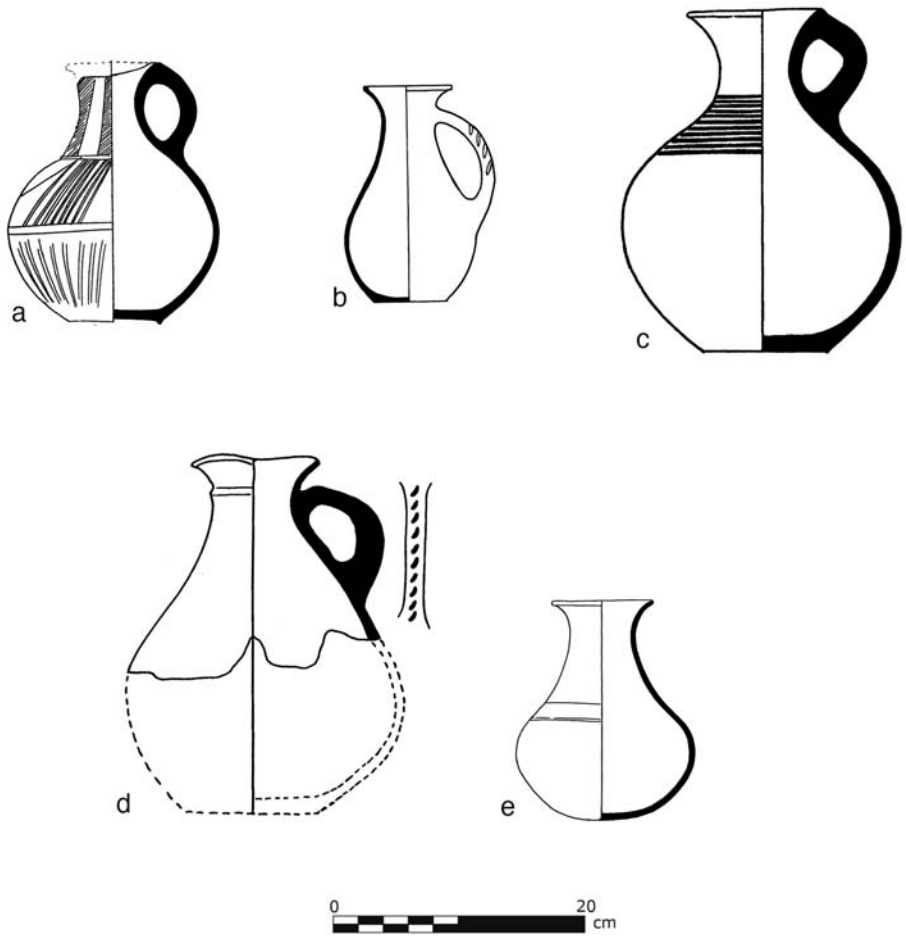

Fig. 7. Examples of jugs of the 6th-4th centuries from Armenia: a. Karchakhbyur; b. Jarkhej; c-d. Jrarat; e. Karchakhbyur (Karapetyan 2003: fig. 14.1, 15.1, 16.1, 17.1, 18.3).

of the neck and the horn-like widening of the rim distinguish it from round-bodied handled jugs of the 7th-6th centuries, but on account of the type's affinities to early jugs, Karapetyan dates it to the late 6th-early 5th centuries (Karapetyan 2003: 34, fig. 14.1-7). The second type has an ovoid body and cylindrical, horn-shaped neck, with handles that join beneath the neck and at the junction of the shoulder and body (fig. 7b). It occurs in reds, buffs, and light browns. Karapetyan regards this as a later form than the

first (5th-4th c.), out of which it develops (Karapetyan 2003: 34, fig. 15.1-4). The third jug group, dated in the same range, is squatter than the other two, with wider body and neck, the latter sometimes decorated with raised bands. Rims widen considerably. Handles join at or below the rim and on the shoulder. Buffs and light browns predominate (fig. 7c) (Karapetyan 2003: 35, fig. 16.1, 4, 5, 6, 7). In all types, handles sometimes carry incised or raised decoration that are reminiscent of decorated handles of the 7th-6th centuries, including the rams horns on the handle from Jrarat (Karapetyan 2003: 35, fig. 17.5). Karapetyan's fourth group is noted for its large size (d. 10-13.5cm), bulbous body, relatively small base, and pinched or trefoil rims. Handles start at or below the rims, and lift upward slightly before arcing down to join on the shoulder (fig. 7d). Although the form occurs in Urartian pottery, it becomes more widespread in the post-Urartian centuries, with minor changes in the accentuation of the trefoil rim. Karapetyan suggests that the roundedness of the handle in section and the slight lift of its shape off the rim may be distinctive to the 6th-4th century examples (Karapetyan 2003: 35, fig. 17.1-4). Buff and light brown surfaces are well slipped and polished. Handless jugs comprise Karapetyan's fifth group, and come in round-bodied, short-necked forms as well as more elongated, horn-shaped forms, both tending toward polished surfaces of reds and browns (fig. 7e) (Karapetyan 2003: fig. 18). Lastly, Karapetyan recognizes two groups of two-handled jugs. The first is narrow and elongated with small base and round handles that join at neck and shoulder (most akin to MPT #3). Well-polished red surfaces predominate. The second is squatter and more round-bodied. The form is difficult to distinguish from the 7th-6th century examples, but it does become more widespread in subsequent centuries (Karapetyan 2003: 36).

Jugs were common at Tsaghkahovit (Pl. 8-10, Pl. 11.27), but the virtual absence of complete profiles prohibits comparison to Karapetyan's groups. That said, Tsaghkahovit provides yet a seventh jug form for the period: the jug with spouted (or "beaked") handle, on view on one of the striking zoomorphic-handled vessels discussed at greater length below (Pl. 9.26i). The spout's opening is fragmented, but the orientation of the orifice in relation to the horizontal plane of the top of the handle suggests that it extended outward, perpendicular to the axis of the vessel, much like a black-polished tubular spout from another vessel (Pl. 9.26o) that recalls a spout from a jug at Baba Jan (Goff 1985: Fig. 9.5). The handled jug with perpendicular spout does not pre-date the Achaemenid era, and is almost certainly derived from contemporary silver vessels.

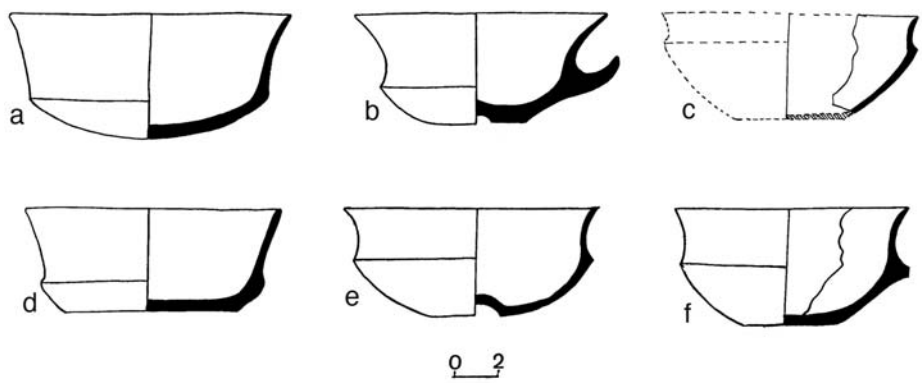

Fig. 8. Examples of carinated bowls of the 6th-4th centuries from Armenia: a. Jrarat; b. Atarbekyan; c. Norashen; d. Jrarat; e-f. Berd (Karapetyan 2003: fig. 26.1, 26.5, 25.4, 26.2, 26.3-4).

The carinated bowl is one of the most common forms of the Achaemenid period in Armenia, but absent highly diagnostic attributes like the high-polish of Urartian "palace ware", it can be extremely difficult to distinguish Urartian- from Achaemenid-era examples. Most of the variants that occur in Urartian contexts (Avetisyan 1992: 72-74, fig. 49), both shallower and deeper varieties, continue into the mid-first millennium (Karapetyan 2003: 39-41, fig. 25-26). Karapetyan has nevertheless delineated three shapes associated with the 6th-4th centuries. The most common resembles the deep Achaemenid silver bowls: the carinated rim is relatively long and predominant, and the shallow rounded body sits low, with a flat, rounded, or omphaloid base (fig. 8a, d). They occur in light colors, and are slipped and polished, with polishing marks often visible. The second sub-type is rarely attested. It has a hook handle at the transition of the base and the rim, and tends to be high-polished, thin walled, and brown (fig. 8b).[15] The third is the *phiala* with petal decoration formed through the application of pressure on the interior surface, occurring in polished browns and grays, to which I return below (fig. 11a-c). To these three subtypes can be added the more ordinary carinated bowls, which either have relatively short rims in

[15] Examples are published from Armavir (Khachatryan 1970: fig. 1.4; Tiratsyan and Karapetyan 1979: fig. 1), Jrarat (Karapetyan 2003: Pl. 26.1, 2, 7; Mnatsakanyan and Tiratsyan 1961; Tiratsyan 1964a: fig. 5), Atarbekyan (Karapetyan 2003: Pl. 26.5), and Kamo (Khachatryan 1970: fig. 1.18).

relation to the height of the body (fig. 8c),[16] or roughly even proportions (fig. 8e-f).[17] Carinated bowls (shallower and deeper) are the single most common bowl at Tsaghkahovit (Pl. 1.1), but virtually all are fragmentary, making it difficult to link to Karapetyan's types with certainty.

Vessels with upwardly oriented spouts occur in larger and smaller sizes (Karapetyan 2003: 41). As with MPT #2, the spout can project diagonally off the shoulder and remain separate from the rim or lean toward and connect to the vessel rim (fig. 3d-f). While Karapetyan assigns these to the 6th-5th centuries, she suggests that variants with more rounded bodies, shorter spouts, and circular handles may be slightly later in date (5th-4th c.) on account of an example from Jrarat (fig. 3d). One squat example in the Etchmiadzin museum, dated to the 4th century, has a yellowish-brown polished surface, its shoulder thickly painted with vertical red lines (Karapetyan 2003: fig. 27.2).

The Sculptural Sensibility and the Early Achaemenid Period

"Sculptural pottery" here refers to any vessel whose production involved clay displacement (e.g. plano-relief carving to form a relief), modeling through pressure, joining appliqués, or other means of creating figurative or abstract features in three dimensions. Reflecting this sculptural sensibility are zoomorphic forms and attributes, such as animal rhyta and animal-handled jugs, as well as abstract or perhaps vegetative attributes like petals, flutes, and gadroons. In the late 6th century, potters used the techniques of carving, appliqués, and modeling to achieve a representational aesthetic to a degree not observed in the immediately preceding centuries, in some cases reviving (deliberately or not) Early Iron Age techniques.

Until now, most known vessels bearing these attributes, particularly the zoomorphic variants, have been unprovenienced examples from Turkey and Iran (Haerinck 1978, 1980). In Turkey, as part of a well-intentioned program meant to impede the illegal antiquities trade, regional museums offer reimbursement for purportedly accidental discoveries (Roosevelt and Luke 2006: 182). As a result, the collections of the Van, Adana, and Erzurum

[16] There are examples from the settlements at Armavir, Oshakan, Erebuni, and Karchakhbyur, as well as a burial at Norashen (Esayan and Kalantarian 1988: XXVII.4, 5, 9; Karapetyan 2003: Pl. 25.4, 6; 26.6; Tiratsyan and Karapetyan 1979: fig. 1).

[17] This is the case with the two bowls from the burial at Berd and bowls from 5th-4th c. Garni (Karapetyan 2003: Pl. 26.3, 4; Khachatryan 1970: fig. 1.6, 7; Tiratsyan 1988: Fig. 10).

museums contain numerous carved, modeled, and painted vessels attributed to the period under study without archaeological context (Yiğitpaşa 2010, 2015; Yiğitpaşa 2009, 2016, n.d.-a). The circumstances of their retrieval, however, and the unintentional consequence of the museums' purchasing program, which can itself contribute to illicit trade (Roosevelt and Luke 2006), cast a shadow over these data. As Roosevelt and Luke have noted, it is impossible to verify whether the purchased antiquities in regional museums in Turkey were truly the result of accidental discovery or "career" looting. The large numbers of complete and rather remarkable vessels in these museum collections do suggest that they derive from sealed burial contexts, making intentional looting a highly likely explanation for their recovery. Moreover, since several examples are one-of-a-kind, with no parallels from legitimate assemblages, they cannot be securely dated and their authenticity cannot be vouchsafed. Thus, notwithstanding the recognition that illicit or unrecorded excavation can be a meaningful form of social practice (Hart and Childton 2015), the present analysis acknowledges only excavated examples with certain provenience. It is in this context that the excavations of Tsaghkahovit are particularly significant, as the sculptural techniques are amply on view at this one settlement, as well as at other controlled excavations in Armenia. Unprovenienced vessels whose discovery is known to predate the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property are also dealt with in passing here. Readers are invited to assess on their own the significance of the above-cited parallels in the regional museums of eastern Turkey, which, though compromised, are nevertheless tantalizingly similar to some of the Tsaghkahovit materials.

Zoomorphic Relief

This attribute refers to zoomorphic representation that takes shape through clay displacement (plano-relief carving) or joining appliqué elements to create animal features in relief on the surface of a vessel. The technique is not attested at sites dating to the centuries immediately preceding the Achaemenid period, and thus its occurrence at Tsaghkahovit can be dated to the post-547 B.C. occupation of the settlement.[18] Two fragmentary jugs

[18] Instances of vessels with zoomorphic relief decoration are known from Late Bronze and Early Iron Age contexts, for instance at Metsamor (Khanzadian 1995: 91, fig. 40, Pl. 60), Dinkha Tepe (Muscarella 1974: 60-61, fig. 26:335) and Hasanlu (Vanden Berghe 1959: 116, Pl. 145d).

from Tsaghkahovit, both high fired, orange-red in color, with slipped and burnished surfaces, provide the best examples of the technique to date (Pl. 9.26h-i), although it was also used to form ram's horns on jug handles from Tmbadir, in northeastern Armenia (Karapetyan 2003: fig. 17.5), and Peshtasar, in southeastern Azerbaijan (Goshgarly 2012: 55, fig. XXXII.3). I have discussed the significance of the Tsaghkahovit jugs at length elsewhere (Khatchadourian 2016: 173-185). On one such vessel (Pl. 11.26h), the bowed handled is decorated in low relief with three stylized anatomical elements of a four-legged mammal, likely created during the leather hard state. The animal is depicted in profile. The lowest of the three linear components extends down the handle toward the shoulder and represents the beast's hind limbs. Attached to the hind leg is a second straight element that stands in for the beast's minimal, diagrammatic body. This element is fragmented at the top, as is the third and shortest element, which parallels the second and appears to represent the beast's flexed forelimbs, tucked tightly beneath the body. The knee join meets the vessel at the rim.

In the case of the second animal-handled jug (Pl. 11.26i), straddling both sides of a spouted handle are linear relief elements that depict, once again, the legs of a leaping quadruped, created by the same technique. They appear to be the beast's forelimbs (radii and metapodials) and the vertical projection on the rim is its neck, providing the overall impression that the animal is meant to be leaping out of the vessel. The similarities in technical execution of the relief decoration, overall vessel morphology, and surface treatment suggest that the two pots were made in the same workshop. INAA indicates that the chemical composition of the fabric of both vessels does not match any of the ceramic reference groups of the Tsaghkahovit Plain (Minc 2009). The vessels are statistically outliers, and thus imports, though their place of origin remains unknown.

In some cases, as we shall see, potters combined the technique of zoomorphic relief with the representational device of zoomorphic modeling.

Zoomorphic Modeling

In this manifestation of the sculptural sensibility, zoomorphic forms are rendered through vessel morphology, which is to say that the animal shape emerges through the structural process of building the pot, and is then further defined through surface enhancement. Theriomorphic vessels are not unique to this period. In Iran, Early Iron Age potters in the region southwest of the Caspian Sea (e.g. Marlik) produced sophisticated vessels

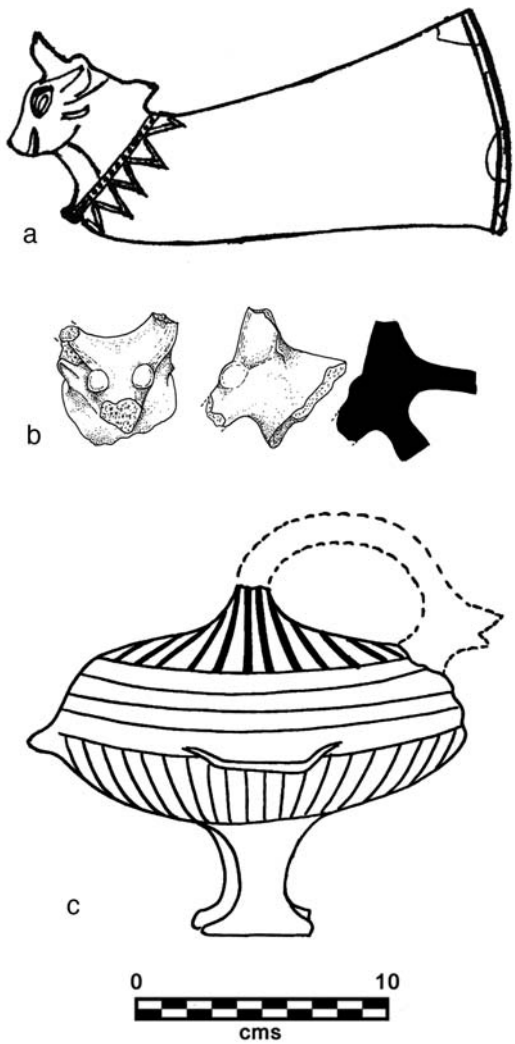

Fig. 9. Zoomorphic vessels produced through modeling:
a. Armavir (Karapetyan 2003: fig. 31.1); b. Sos Höyük (Sagona et al. 1996: fig. 7.4);
c. Astghi Blur (Karapetyan 2003: fig. 30.1).

in animal forms (Negahgban 1996). But to the north, the technique is virtually absent until the mid-first millennium.[19] At this time, forms include ceramic horn-shaped rhyta, such as the buff-brown, highly polished and

[19] The gazelle-head rhyton from Bastam is "unique among Urartian ceramics" (Kleiss 1980: 301).

incised example from Armavir that terminates in a bull's head (Karapetyan 2003: 44, fig. 31.1), or the dark-brown, burnished bull-head rhyton fragment from Sos Höyük (fig. 9a-b) (Sagona et al. 1996: fig. 7.4). In general, the horn-shaped rhyton is found far and wide across the Achaemenid realm, both in the imperial period and after (e.g. Ebbinghaus 1999; Petrie et al. 2008), and thus cannot be regarded as a distinctive feature of the northern Near Eastern highland ceramic repertoire. Regionally distinctive modeled zoomorphic forms include bird-shaped vessels with legs, wings, head and tail, such as the complete example from Astghi Blur (fig. 9c) (Karapetyan 2003: 43, Fig. 30.1).

The Tsaghkahovit corpus contains two seemingly identical theriomorphic vessels—one highly fragmentary, the other partially restored (Pl. 13.54). The rhyton's exterior surfaces are red-polished, while the interior is untreated and striations indicate the use of a rotational device for manufacture. The small vessel (just over 9cm long) takes the form of a recumbent animal whose portly body bears down on its legs, each defined with precisely rendered joints and hoofs using the same technique of plano-relief carving or appliqué discussed above. An upper arcing element may depict a horn or antler, or an effort to define the front leg. The vessel's overall form in terms of pour spout location is uncertain. The tail of the animal appears to have spalled off, suggesting that the enhancement technique for the relief decorations was appliqué. Results of INAA performed on the fragmentary, unrestored Tsaghkahovit rhyton with relief decoration are inconclusive, providing a possible link to the northern Aragats clay sources, but, significantly, not clearly matching the chemical signature of the animal-handled jugs. Likely, more than one potter or workshop was making use of zoomorphic relief.

Zoomorphic modeled attachments

Potters brought zoomorphic qualities to their craft not only through the forming process and relief surface enhancement but also by affixing modeled attachments, such as handles and spouts, that could be both ornamental and functional.[20] A bowl from Erebuni that was recovered in the upper levels of room 11 has a horizontal handle in the form of a duck neck and

[20] A possible antecedent is the upright projection on the MPT#3/late Urartian jugs, which some scholars have regarded as "utterly stylized" (Piotrovskii 2011 [1944]; Tiratsyan 1964b: 162) zoomorphic elements.

head, much like the footed serpentine plate from the Treasury at Persepolis (fig. 10a) (Loseva 1958: fig. 10.4; Schmidt 1957: Pl. 53.3; Tiratsyan 1960). Similarly, recovered in a mixed deposit at Armavir was a bowl with vertically oriented duck handle, the bird's beak joining the rim in a manner similar to the stone footed plate and tray from the Treasury (fig. 10b) (Karapetyan 2003: 45; Schmidt 1957: Pl. 53.1, 5). Provenienced examples of modeled animal attachments on the handles of jugs are best known from Mingechaur (fig. 10c-d) (Abramova 1969; Golubkina 1951: fig. 15-16; Haerinck 1980: fig. 6.2-4; Tiratsyan 1964a).

The best-preserved example of modeled zoomorphic attachments from Tsaghkahovit is a three-dimensional bull spout from a black-polished jug (Pl. 10.53a). The animal has two flaring nostrils on the muzzle, and two incised arcs above the eyes, not unlike the incised eyes on the rhyton from Armavir. These few details suffice to recognize the direct iconographic parallels with bull imagery from the Achaemenid heartland, most notably the double-bull's-head capitals that supported the roof beams of the columned halls (Khatchadourian 2016: 177-179). Several other modeled animal attachment fragments from Tsaghkahovit simply defy anatomical identification, but make plain that there were protrusions or decorative extensions that embellished the vessels to which they were adjoined (Pl. 10.53b-d).

Abstract or Vegetative Modeling

Potters pursued the art of modeling to embellish surfaces with geometric forms that sometimes resemble flora. For instance, **petals** in relief formed through pressure on the interior surfaces occur most commonly on bowls. This technique may not have been an innovation of Achaemenid-era potters. H. Avetisyan (1992: 73, fig. 48) regards examples from Oshakan, Karmir Blur, and Erebuni to be Urartian-era imitations of metal *phialai*, and others have offered a similar date for the Erebuni examples (Khachatryan 1970: 275). Whether or not this dating is correct,[21] bowls with relief petals occur in later assemblages, not only at Tsaghkahovit (Pl. 5.37), but

[21] There is cause for doubt, since the petaled bowl does not appear to occur in the ceramics of the Urartian heartland (Kroll 1976), and Oshakan, Erebuni, and Karmir Blur are all sites with various kinds of activity in the 7th–5th centuries. The single example from a presumably unstratified deposit at Bastam does not appreciably assist in the dating of this surface treatment (Kroll 1979: 216, fig. 11.7).

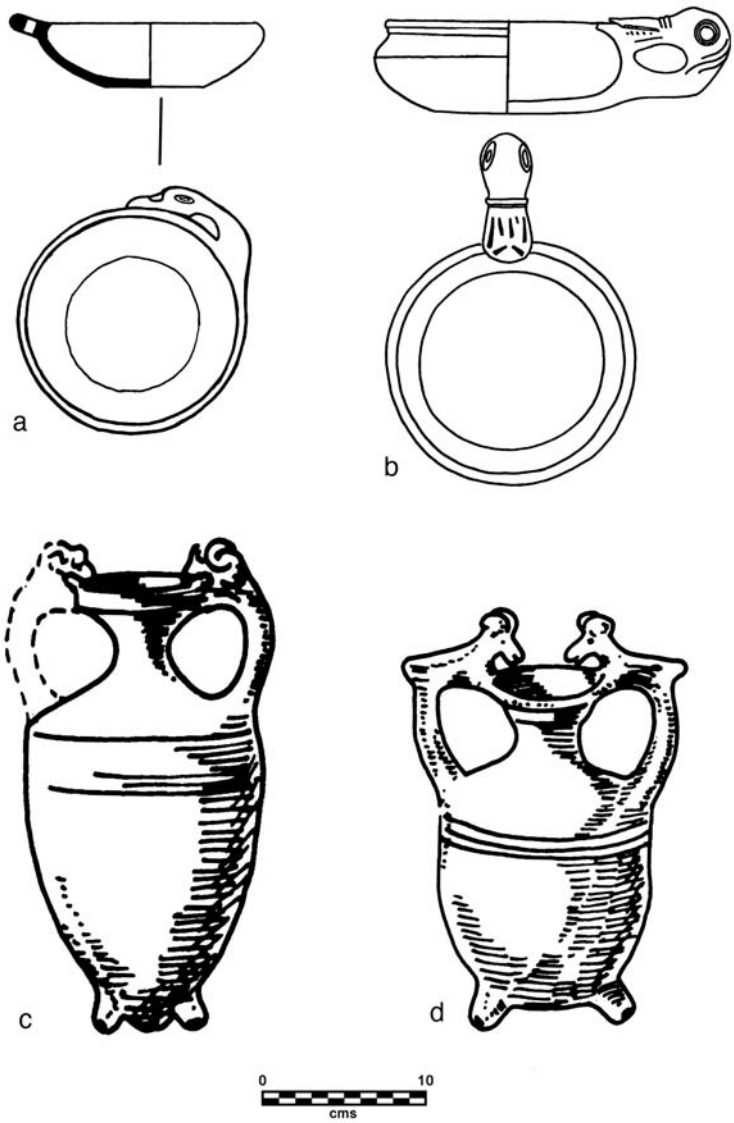

Fig. 10. Vessels with zoomorphic modeled attachments:
a. Erebuni (Karapetyan 2003: fig. 31.3); b. Armavir (Karapetyan 2003: fig. 31.2);
c-d. Mingechaur (Haerinck 1980: fig. 6.2-3).

also at sites like Armavir and Garni (fig. 11a-b) (Khachatryan 1970: fig. 2.11, 12; Tiratsyan and Karapetyan 1979: fig. 1). On examples from Erebuni and Jrarat, petals are formed through carving or incision on the interior, and do not create a visible lobing effect on the exterior (fig. 11c) (Karapetyan 2003: 41, fig. 26.6-7; Khachatryan 1970: 276, fig. 2.9; Mnatsakanyan and Tiratsyan 1961: fig. 4). While bowls appear to have been the preferred form for petals, a jug from Tsaghkahovit with adjacent relief petals (further defined through incision) suggests some potters extended this decorative motif to other vessel forms (Pl. 10.45).

Both jugs and bowls can have elongated vertical **gadroons**, sometimes formed only through pressure on the interior surface, other times further defined with incision. They are also vaguely reminiscent of petals or leaves, but may not be representational at all. The Sos Höyük assemblage has a rare concentration of gadrooned and petaled bowls (fig. 11d-g) (Parker 1999: 2.5; Sagona et al. 1996: 5.4, 5.6). From the Tsaghkahovit assemblage, the jug shown in Pl. 10.45 has a number of slightly arced, nearly vertical, elongated relief lobes, widely spaced on the vessel body, created as if through the upward stroke of a thumb on the vessel's interior.[22] On the black bowl (Pl. 5.40), seven gadroons are partially preserved averaging approximately 0.25mm in width.[23] A small, fine, black-polished pot from a burial at Berd combines horizontal flutes on the neck with vertical gadroons encircling the shoulder and likely the body (fig. 11h) (Karapetyan 2003: 38, fig. 23.4). Khachatryan (1970: 277, fig. 2.5) sees an Urartian antecedent in a red-painted vessel from Armavir with vertical gadroons (fig. 11i).[24]

The inverse of gadrooning, **fluting,** appears to be less common, but does occur on jugs from Tsaghkahovit (Pl. 8.26e-g), and elsewhere, for example, Khuzistan (Carter 1994: fig. 14.4). The technique has antecedents in the earlier Iron Age, but is not common in Urartian ceramics. Khachatryan (1970: 277, fig. 2.3) regards as Urartian a brown-polished double handled jug from Armavir with vertical fluting (that stops short of the base) (fig. 11j), but an Achaemenid date might be more appropriate.

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[22] These "fronds" are difficult to see in the photograph. INAA results on this vessel are inconclusive, providing a *possible* link to the northern Aragats clay sources.

[23] INAA indicates that this vessel is a product of a local workshop.

[24] The author notes that the sherd was found outside the city walls, between the southern towers, and alongside other sherds carrying Urartian potters' marks, but the nature of this extramural find context (stratified deposit? surface? midden?) is unspecified.

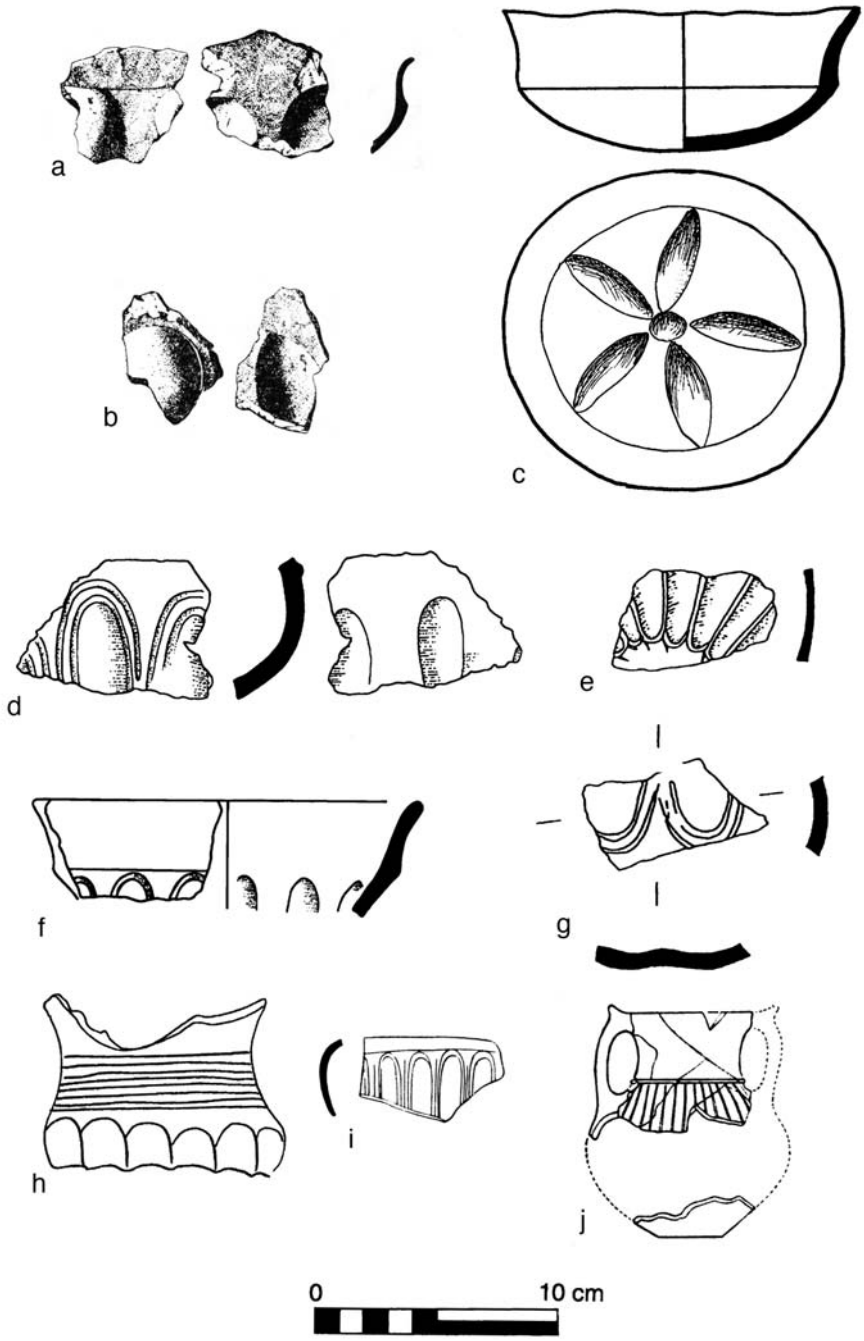

Fig. 11. Vessels with petal modeling, gadroon modeling, and vertical fluting: a-b. Armavir (Khachatryan 1970: fig. 2.11-12); c. Jrarat (Karapetyan 2003: fig. 26.7); d-g. Sos Höyük (Parker 1999: fig 1.6, 2.5; Sagona et al. 1996: fig. 5.4, 5.6); h. Berd (Karapetyan 2003: fig. 23.4); i-j. Armavir (Khachatryan 1970: fig. 2.3, 2.5).

Painted Pottery and the Last Achaemenid Century

Potters of the mountains added a new dimension to their craft in the late 5th or 4th century. The inclination to render clay a medium for representational or otherwise decorative forms led to a broadening of the potter's technical repertoire to include the art of painting, making the pot both a container and canvas. The new decorative technique entailed embellishing surfaces (often cream or buff) with red, brown, or more rarely black painted triangles and other geometric shapes (parallel lines, zigzags, net patterning etc.), usually in monochrome, but sometimes bichrome. Archaeologists have come to call these pottery styles "Triangle Ware" and "Festoon Ware", although it is becoming increasingly apparent that these styles represent only rather specific variants within a multifarious painting tradition consisting of a wide range of motifs and vessel forms. Robert Dyson coined the term "Triangle Ware" in 1958 to refer to vessels with a very fine buff fabric, thin walls, and highly polished surfaces that carry triangle motifs. Subsequently, others came to use the term more liberally to refer to materials of "different forms and fabrics having in common painted triangle motifs" (Dyson 1999a: 102), and other geometric designs. In this sense, Triangle Ware more precisely denotes a *style* rather than a ware (Dyson 1999a: 102), the surface decoration following many other moments of stylistic choice that permeate the production process. It has become common to refer to the ware as Classic Triangle Ware and the style as Western Triangle Ware, although I refer to the latter as Triangle Style to avoid the inapt implications of "ware". Related to Triangle Style is what David Stronach termed Festoon "Ware" to refer to a painting aesthetic consisting not of triangles but of chains of hanging loops that appear on the rims of bowls or shoulders of larger vessels (Stronach 1974).

The question of the dating of the Triangle and Festoon Styles has received over a half a century of scholarship that need not be recounted in detail here. Suffice it to say that the current consensus among most archaeologists who have grappled with the materials places the initial inception of the style in the 5th century. Others have narrated the story of how this consensus emerged (Dyson 1999b; Summers and Burney 2012). The abridged version goes roughly like this: in the 1960s, credit for the stylistic innovation went to Urartian potters. But by late in that same decade, new research made that view difficult to sustain. From the 1970s to the new millennium, as new research and the reanalysis of old collections in

Iran, Turkey, and Georgia got underway, the inception of Triangle Style was variously placed in the "Median" period, the Achaemenid period, or in the "transitional" period of the Late Achaemenid/Early Parthian periods. In 1999, Dyson suggested that "Triangle Ware in all its forms should be dated primarily within the Achaemenid period (and perhaps slightly later)" (Dyson 1999b: 137). Most scholars now agree that Triangle Style was an innovation of late 5th century potters in some regions of the large area that spanned from eastern Anatolia to northern Pakistan, and that the painting technique and styles particularly took hold among subsequent potters of the 3rd and 2nd centuries (Dittmann 1984; Narimanishvili and Shatberashvili 2004; Narimanišvili 2000; Sevin 2002; Summers and Burney 2012). There is also a growing sense that it may have occurred at slightly different times in different regions. Some have proposed, for instance, that Triangle Style may have begun a bit earlier in Iran than in the Caucasus (Kroll 2003: 285, 2013a: 190; Narimanišvili 2000).

There is less agreement concerning the dating of Festoon Style. Stronach (1974) maintained that it appeared in Iran no earlier than 500 B.C. Louis Levine subsequently proposed that Festoon Style developed after Triangle Style, which, with the current dating of the start of the latter to the Achaemenid period, would place Festoon Style in what archaeologists of Iran call the "Early and Middle Parthian periods to the end of the first millennium B.C." (Dyson 1999b: 138). Hence, Ernie Haerinck's dating of Festoon Ware from Nush-i Jan (Haerinck 1983: Fig. 14), which accords with the Hellenistic dating of the style among Armenian archaeologists. But archaeologists working in eastern Turkey assign the Festoon Style pottery of the Van region and elsewhere either to the Achaemenid period in general, or more specifically to around 400 B.C. (Sevin 2002: esp. Fig. 5.1; Yiğitpaşa 2016, n.d.-b). The question is still an open one, but the weight of opinion seems to favor a date for the style's inception that post-dates the inception of Triangle Style and begins, at the earliest, late in the Achaemenid era.

We lack the temporal resolution to identify the place where this painting tradition originated, but what is clear is that triangles had been a part of potters' decorative sensibilities for centuries. Narimanishvili and Shatberashvili (2004: 122-3) rightly note that inspiration for the triangle motif, at least in the South Caucasus, may have derived from potting traditions that stretched as far back as the Late Bronze and Early Iron Ages, when potters commonly drew polished or incised triangles filled with oblique and net-like patterns. Closer in time, we can look to the relief, incised, and impressed triangles

found on Urartian *pithoi* and "cultic" vessels from Urartian period burials (Avetisyan 1992: Fig. 1, Fig. 3.7, 3.11, Fig. 17.3-5; Kroll 1976: Type 71b). Occasionally, potters of the 7th century depicted triangles using paste, as in the case of the double-handled jugs from Erebuni (fig. 4d) and the handless jug from Agrab, both of which combine incision with white/yellowish paste fill on a red-polished background (Avetisyan 1992: 70, fig. 45.02; Avetisyan and Bobokhyan 2012: Pl. VI.3; Muscarella 1973: Pl. IVb). Painted pottery is virtually absent from the Urartian repertoire, and thus particularly unusual is the double-handled jug from Argishtihinili with two registers of alternating light-pink and dark-red triangles on a red-polished background (fig. 4c) (Avetisyan 1992: 70, 45.03; Martirosyan 1974: Fig. 72).[25] As we shall see, the arrangement of the design elements is quite similar to that on several Triangle Ware jugs. North Iranian precursors for triangle decorative motifs also exist, such as the vessels with incised triangles on buff fabrics from Zendan-i Suleiman and Ziwiye (Dyson 1967: fig. 1037, 1999b: 127-9), which Rainer Boehmer (1988: 95) dates to the 7th century.

Until quite recently, northern Iran was the focus of attention, in part because Dyson initially defined the Triangle style from the materials at Hasanlu, but also because the style in all its variety occurs here in relatively high concentration and across a number of surveyed and excavated sites (fig. 12) (Ingraham and Summers 1979; Kroll 1984a, 2000; Swiny 1975). At Hasanlu, both Triangle Ware and Triangle Style occur in secondary

[25] A few other painted vessels appear recurrently in the literature on Urartian pottery in Armenia, each seeming to be a unique craft experiment, and thus defying easy classification. One is a predominantly buff *askos* from Karmir Blur with three registers of painted decoration containing nested polychrome upright triangles and circles, hatched netting, and checker patterning (Avetisyan 1992: Fig. 53.1; Avetisyan 2001: 69, Fig. 81.1; Avetisyan and Avetisyan 2006: 155, Fig. 164.1; Piotrovskii 1969: Pl. 58). Kroll's brief discussion situated the vessel alongside other painted pottery that is now known to date to later periods, and regarded the form as one that began in the late Urartian period and extended into the Achaemenid (Kroll 1976: 163-4). Several of the design elements on the vessel, such as triangles with hatching and the net pattern, are common to Triangle Ware, but the vessel does not fit within that tradition. Another unique vessel derives from burial 84 at Oshakan, which was looted in antiquity. The jug is red-polished on the neck and body, but cream on the shoulder (Esayan and Kalantarian 1988: 90). The red-painted motif includes a series of nested triangles with hatched and dotted patterns. Two vertical dividers set off a central panel containing three wild male bezoar goats with long, arcing antlers surrounded by patterned triangles and diamonds. The vessel is dated to the 9th-8th c., but goat/ibex iconography is not otherwise attested in Urartian art, and the form is atypical of the period. Scholars attribute the unusual zoomorphic iconography, which recalls elements of Bronze Age painted pottery, to "local traditions" (Avetisyan 1992: Pl. L).

Fig. 12. Examples of Triangle Ware and Triangle Style pottery from sites in Iran: a-b. Hasanlu, Imported "Classic" Triangle Ware (Dyson 1999b: fig. 2a-b); c-g. Hasanlu, "Classic" and non-"Classic" Triangle Ware Bichrome Bowls (Dyson 1999b: fig. 5); h-j. Yanik Tepe, jugs from Trench K Level 2 Pit X (Summers and Burney 2012: fig 8.6, 8.1); k-l. Unprovenienced painted twinspouted jugs said to be from Iranian Azerbaijan (Haerinck 1978: fig. 1.1-2).

deposits without associated architecture (Kroll 2013a: 191). The single largest excavated assemblage of Triangle Style recovered to date is from a number of pits at Yanik Tepe, containing a limited range of vessel forms and decorative elements such as carinated bowls, pilgrim flasks, bottles, jugs and jars (Burney 1962; Summers and Burney 2012). Among the closed vessels, particularly notable are jugs with multiple registers of upright triangles—solid, nested, or cross-hatched—which recall in design layout the double-handled jugs with two registers of hanging triangles from Erebuni and Argishtihinili (fig. 4c-d) (Burney 1962: Pl. XLV.30; Summers and Burney 2012: Fig. 8.1, 8.6).[26] Unprovenienced examples thought to originate in northern Iran include the twin-spouted zoomorphic jugs and bowls that Haerinck dated to the 5th-2nd centuries and called the "Ardabil style" (Haerinck 1978: fig. 1.1, 2, 1980), some of which, with their modeled animal attachments, conjoin the sculptural and painterly sensibilities (fig. 12k-l). Although particularly well represented in the north, Triangle and Festoon Styles have a wider distribution across Iran. Achaemenid or Late Achaemenid/Early Parthian occurrences of Triangle Style have been identified from survey and excavation at Jameh Shuran I and II (Levine 1987: 139-40), Baba Jan and the Pish-i Kuh region (Goff 1985; Goff Meade 1968: Fig. 9.14), Masdjid-i Soleiman (Haerinck 1983: Fig. 2), Pasargadae (Stronach 1978a) and Susa (Stronach 1974). Festoon Style is known from such places as central Luristan, Susa, Pasargadae, and Ziwiye (Dyson 1999b: Fig. 9a).

In eastern Anatolia, new discoveries and the reanalysis of old collections are revealing an abundance of Triangle Ware and Triangle Style pottery. Investigations on the western part of the outcrop at Van/Tushpa unearthed sherds of Triangle pottery among surface finds and excavated alluvial deposits. Forms included standard carinated bowls with painted hanging triangles on the rim, or other geometric motifs on the top surface of ledge-rim bowls (fig. 13a-b) (Tarhan 1994: fig. 18.1-2, 2007: Fig. 8). Likewise, after a hiatus at nearby Karagündüz following the abandonment of the Urartian constructions, inhabitants in a new occupation phase filled a number of deep pits (as at Yanik Tepe) with a variety of painted vessels, including Classic Triangle Ware and Triangle Style, sometimes incorporating animal motifs (fig. 13c-f) (Sevin 1998, 2002; Sevin et al. 1998;

[26] The vessel shown in figure 13j (YT 230) is in the Manchester Museum storeroom (not registered). The photograph is courtesy of G. Summers, who would like to thank Bryan Sitch, Susan Martin and Irit Markiss for facilitating his study in 2016.

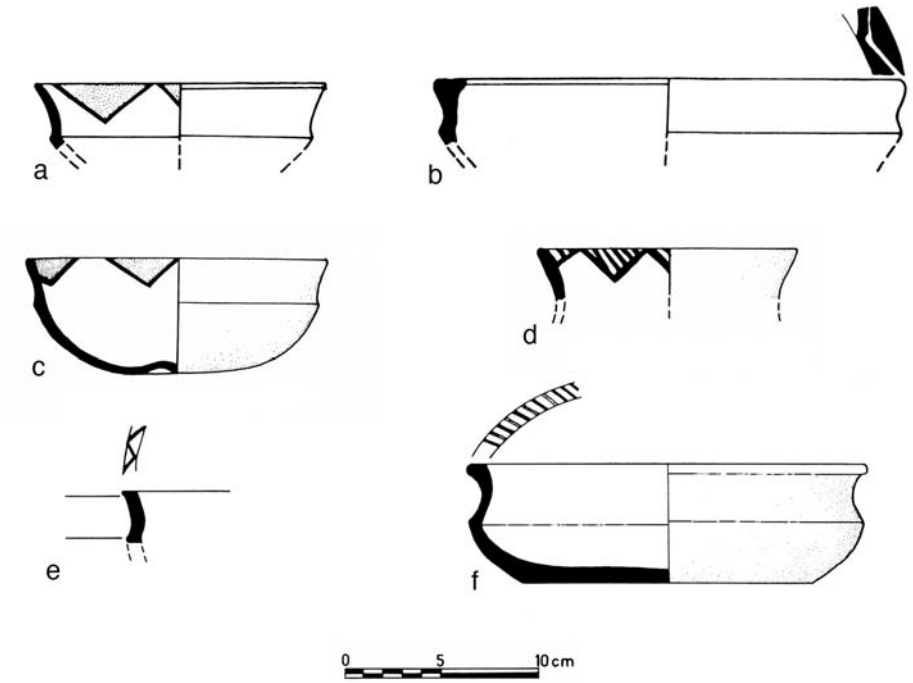

Fig. 13. Examples of Triangle Style pottery from sites in Turkey: a-b. Van (Tarhan 1994: fig. 18.1-2); c-f. Karagündüz (Sevin 1998: fig. 2.1, 2.5, 3.1, 3.5).

Sevin et al. 2000). Burials at the site also contained the style. Further to the northwest, in perhaps the earliest study to recognize Triangle Style as an Achaemenid-era potting tradition in eastern Turkey, Geoff Summers (1993) reanalyzed ceramic collections from early excavations and survey at Altıntepe and Cimin Tepe II, overturning earlier interpretations of the columned hall at Altıntepe as an Urartian edifice, understandings that were based in part on the misdating of Triangle Style (Emre 1969). In similar fashion, it is now possible to draw into the 5th or 4th centuries the Triangle Ware and Triangle Style pottery discovered at Toprakkale, which Piotrovskii mistakenly assigned to the Urartian period (Piotrovskii 2011 [1944]: cat. 215, 216, 232, 236, 418, 419). If we add to these examples the considerable collections of provenienced and unprovenienced Triangle and Festoon Style pottery in the Van Archaeological Museum, the Erzurum Museum, and the Istanbul Archaeological Museum, the notable scale of Triangle Style production in this region becomes apparent (Yiğitpaşa

2009, 2015, 2016, n.d.-b). The headwaters of the Euphrates appear to demarcate the western limit of the style's distribution, with Altıntepe and Cimin Tepe II providing the westernmost examples (Summers and Burney 2012: 278). It does not occur at Tille Höyük (Blaylock 2016: 59).

On current evidence, Georgia provides the northern limit, where a striking density of complete Triangle Style vessels from burials has made possible a typology of the style based on details of the triangle designs (fig. 14) (e.g., numbers of registers, patterns of in-fill) (Narimanishvili 2000; Narimanishvili and Shatberashvili 2004). Here, jugs predominate over bowls. The list of sites is worth enumerating, if only to dispel any lingering notion that Iran is somehow a unique center for the production and use of painted pottery with triangle motifs: Shavsakdara II and III, Kamarachevi, Mtskhetijvari, Asureti, Papigora, Chalipira, Etso, Kotishi, Varishmaantkari, Tbilisi, Sakraveli, Natsagora, Abulmugi, Kushchi, Bazaleti, Dirbi, Takhtidziri, Vani, Dachrilebi, Bambebi, Okhera, Marabda, Teladgori, Itkvisi, Grmakhevistavi. This is the largest published corpus of Triangle Style anywhere in the northern Near Eastern highlands, and it does not even include fragmentary specimens from settlements. While several examples appear to post-date the Achaemenid period, Narimanishvili and Shatberashvili (2004: 123) posit that the earliest vessels in the triangle style—with specifically upward pointing rather than hanging triangles (such as those shown in fig. 14)—belong to the 5th or 4th centuries.

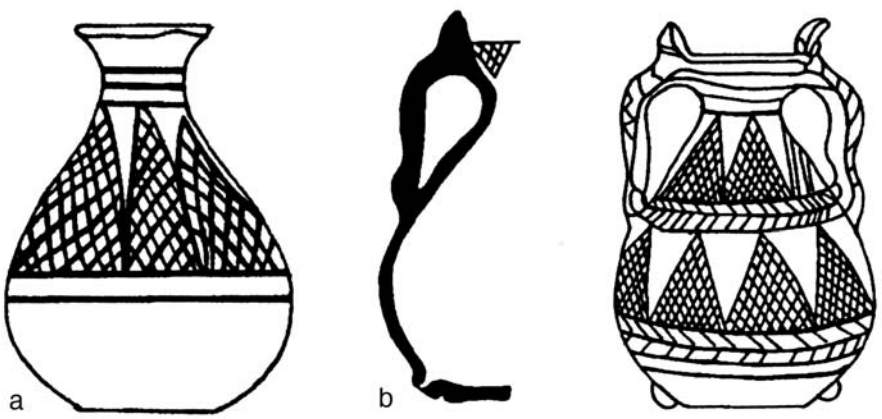

Fig. 14. Examples of Triangle Style pottery from sites in Georgia:
a. Chalipira; b. Bazaleti (Narimanishvili and Shatberashvili 2004: fig. 1.6, 3.5).

Triangle and Festoon Styles in the territory of the Republic of Armenia have been virtually absent in the English-language scholarly literature, making it seem as though there is a gap in the distribution of the styles between eastern Turkey and Iran in the south, and Georgia in the north. This is not the case. Yet among Armenian archaeologists today it is generally held that painted pottery emerges in earnest in the Hellenistic era, occurring only rarely during the last Achaemenid century. This view comes across from more than one synthetic, authoritative work (e.g. Karapetyan 2003; Tiratsyan 1988), although it is notable that publications from the 1960s and 1970s more readily entertained the possibility of painted pottery in the 5th–4th century.

One vessel category for which an early dating still obtains is the small or medium-sized jug with painted, thick-stroked, unfilled triangles bounded by one or more concentric line. A fragmentary example from operation 7f on the western part of Armavir (fig. 15a) can be compared to the other jugs with similar painted motif in the State Historical Museum of Armenia (fig. 15b-c) (Karapetyan 2003: 29, Pl. 20.1,2; Tiratsyan 1965: fig. 1.5, 1970: 66, fig. 1.4,5, 1971b, 1988: fig. 30).[27] With their empty triangles rendered in thick lines, these vessels resemble jugs from Etso and Papigora, in Georgia (Narimanishvili and Shatberashvili 2004: fig. 2.7-8). Also in the State Historical Museum of Armenia, and without provenience, is a single-handled jug on whose neck and shoulders are a series of concentric lines, festoons, and chain motifs, below which, on the body, is a row of 12 hanging triangles that extend from below the shoulder/body break toward the base (fig. 15d) (Khachatryan 1966: Fig. 1.2; Tiratsyan 1970: fig. 1.6). Polychrome buff jugs from Argishtihinili/Armavir that intricately combine triangles, festoons, lines, and net patterns are likely later than the aforementioned jugs (fig. 15e-f) (Martirosyan 1974: fig. 23; Tiratsyan 1973: fig. 6-7).

Jars with short necks also sometimes carry painted motifs. Two such examples are the bulbous jars from burial 59 at Oshakan (fig. 16a-b). One bears four rows of wavy lines on the upper shoulder, below which is a series of adjacent, upright nested triangles (Esayan and Kalantarian 1988:

[27] The vessels of fig. 15b-c were found in 1895, in burials at Karmir Vank, in present day Nakhichevan (Karapetyan 2003: 29). The Armavir vessel is coarse and painted white on red (Tiratsyan 1965, 1971b).

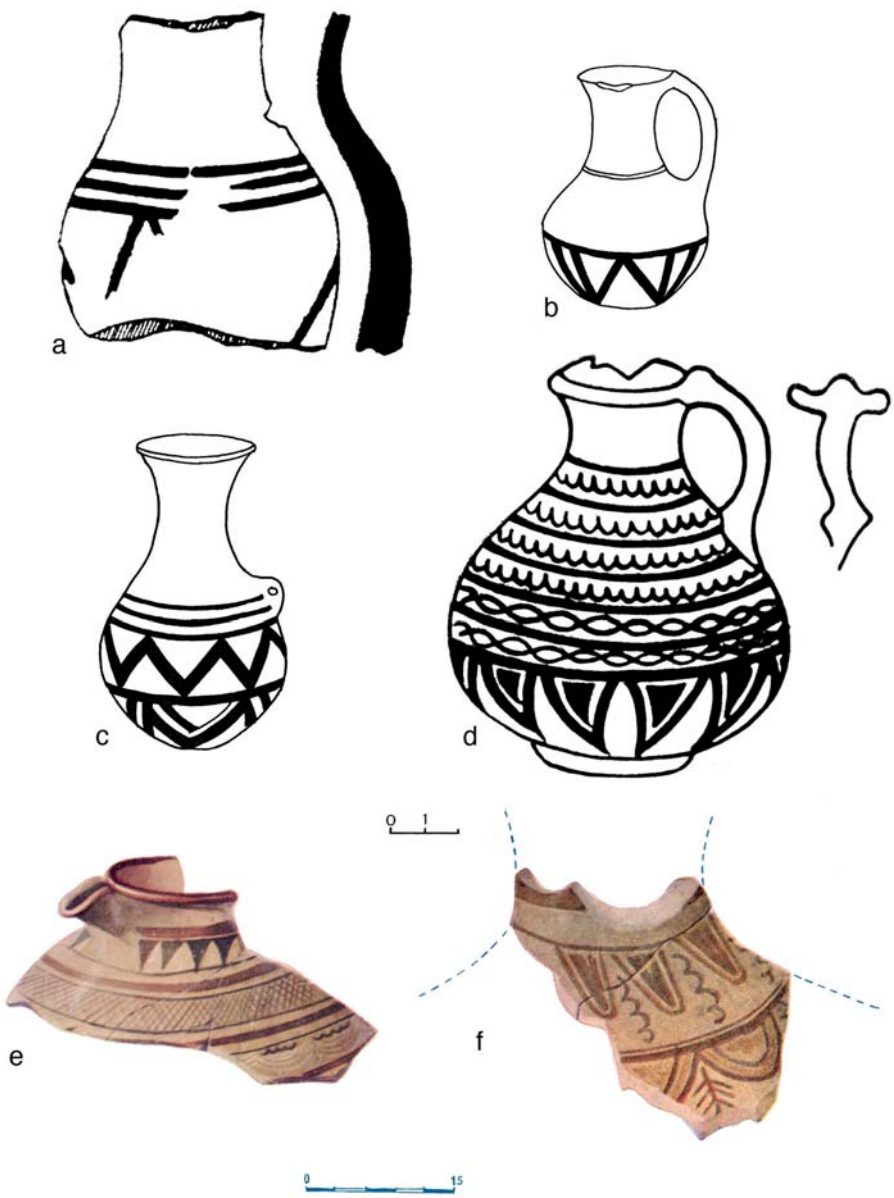

Fig. 15. Painted jugs from sites in Armenia: a. Armavir (Tiratsyan 1965: fig. 11.5); b-c. Karmir Vank, Nakhichevan (Karapetyan 2003: fig. 20.1-2); d. unprovenienced, in State Historical Museum of Armenia (Tiratsyan 1970: fig. 1.6); Argishtihinili/Armavir (Martirosyan 1974: fig. 23).

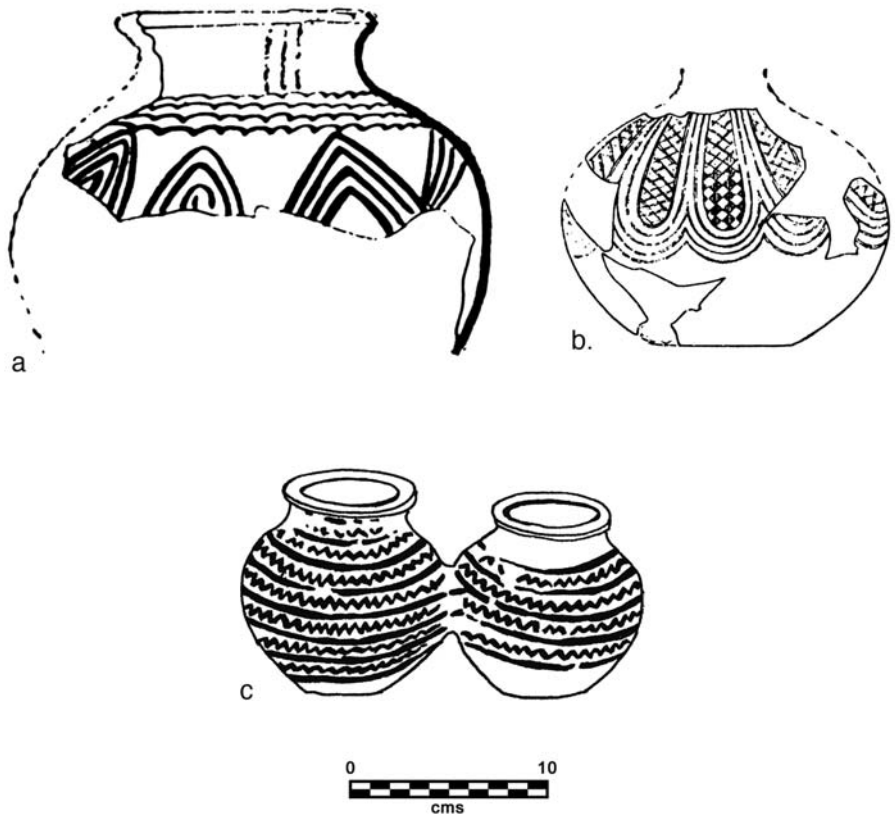

Fig. 16. Painted jars from sites in Armenia: a-b. Oshakan burial 25 (Esayan and Kalantarian 1988: Pl. LVII.1-2); c. Karmir Blur lower town (Karapetyan 2003: fig. 23.2).

fig. LVII.1).[28] The other is a bichrome buff jar, red slipped on the lower body and decorated on the buff surfaces of upper body with red painted nested low hanging festoons or petals filled in with net hatching (Avetisyan 1992: fig. 53.3; Avetisyan 2001: fig. 81.3; Esayan and Kalantarian 1988: 78, Pl. 3, fig. LVII.2).[29] In the case of the former, the combination of a

[28] Published descriptions do not discuss fabric or colors, but dark paint on a buff background is likely.

[29] Burial 59 is typically regarded as one the earlier tombs at the Oshakan cemetery, and dated to the 8th-7th centuries on the basis of much of the inventory (Avetisyan and Avetisyan 2006: 60). But little attention has been given to these two vessels, which have no

concentric element on the upper shoulder and adjacent upright triangles below, recalls two jars from Yanik Tepe (Summers and Burney 2012: Fig. 22, 9.7, 17.27). Other painted closed vessels include the reddish "double-bodied" jar from a burial in a building of the lower town at Karmir Blur (fig. 16c) (Martirosyan 1961: 41-42, fig. 66). The distinctive vessel is adorned with alternating red and brown straight and wavy lines—a 5th-4th century decorative modification to an Urartian form (Karapetyan 2003: fig. 23.2; Tiratsyan 1965: fig. 1.1, 1968: 24, 1988: 38, Pl. III.2).

In contrast to jugs and jars, painted bowls in Armenia are today almost always dated to the Hellenistic period, and yet there are numerous examples with designs closely resembling vessels from northern Iran and eastern Turkey that are assigned to the last Achaemenid century. These include carinated bowls from sites like Armavir and Garni that have nested bichrome or polychrome triangles painted on the interior of the rim (fig. 17), as well as ledge-rim bowls on whose top surfaces are such painted motifs as linked-lotuses, oblique lines, triangles, triangular designs that resemble birds in flight, and the familiar net-hatched design contained within a series of linked diamonds (fig. 18) (Karapetyan 1971; Khachatryan 1970: fig. 3, 4.2, 1981: fig. 36.6, 8, 10, 12; 41.1-2; Tiratsyan 1965: Fig. 1.2,3, 1973: fig. 3, 1974: Fig. 3, 1988: Fig. 27.2, 3).[30] Among carinated examples, particularly interesting is the 5th-4th century bowl from trench 7b at Garni, which carries both interior relief petals on the body as well as black-painted triangles and wavy lines on the interior and exterior of the rim (fig. 17h) (Khachatryan 1970: 276, fig. 4; Tiratsyan 1965: 276, fig. 1.2). As on the "Ardabil style" jugs, the two conceptions of clay as canvas and sculptural medium are here

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parallels in Urartian ceramics, and fit comfortably within the painted pottery styles of the 5th century or later. Moreover, burial 59 was archaeologically complicated. Containing no less than 11 skulls, it was clearly a collective tomb. The bodies were disarticulated, one point of evidence among several that led the excavators to maintain that the tomb was looted. Three Sassanian coins of Vahram I that "evidently fell out of [the thieves] pockets" placed the looting in the 3rd century AD (Esayan and Kalantarian 1988: 77). Notably, the inventory contained a small blue-glazed alabastron, a form most common to the 1st century (Esayan and Kalantarian 1988: Pl. 2; Herles and Piller 2013: 209-10). The weight of the evidence thus makes it likely that the inventory is the result of multiple depositional events, again supporting a date of the painted vessels that aligns with the wider consensus on the introduction of such triangle and hanging hoop motifs in or after the 5th century.

[30] Karapetyan (2003: 39) has suggested that the bowls with painted decorations on the tops of the rims, while "on the whole" dated to the Hellenistic period, may emerge from similarly shaped bowls of the 6th-4th centuries on which decoration was rendered with grooves.

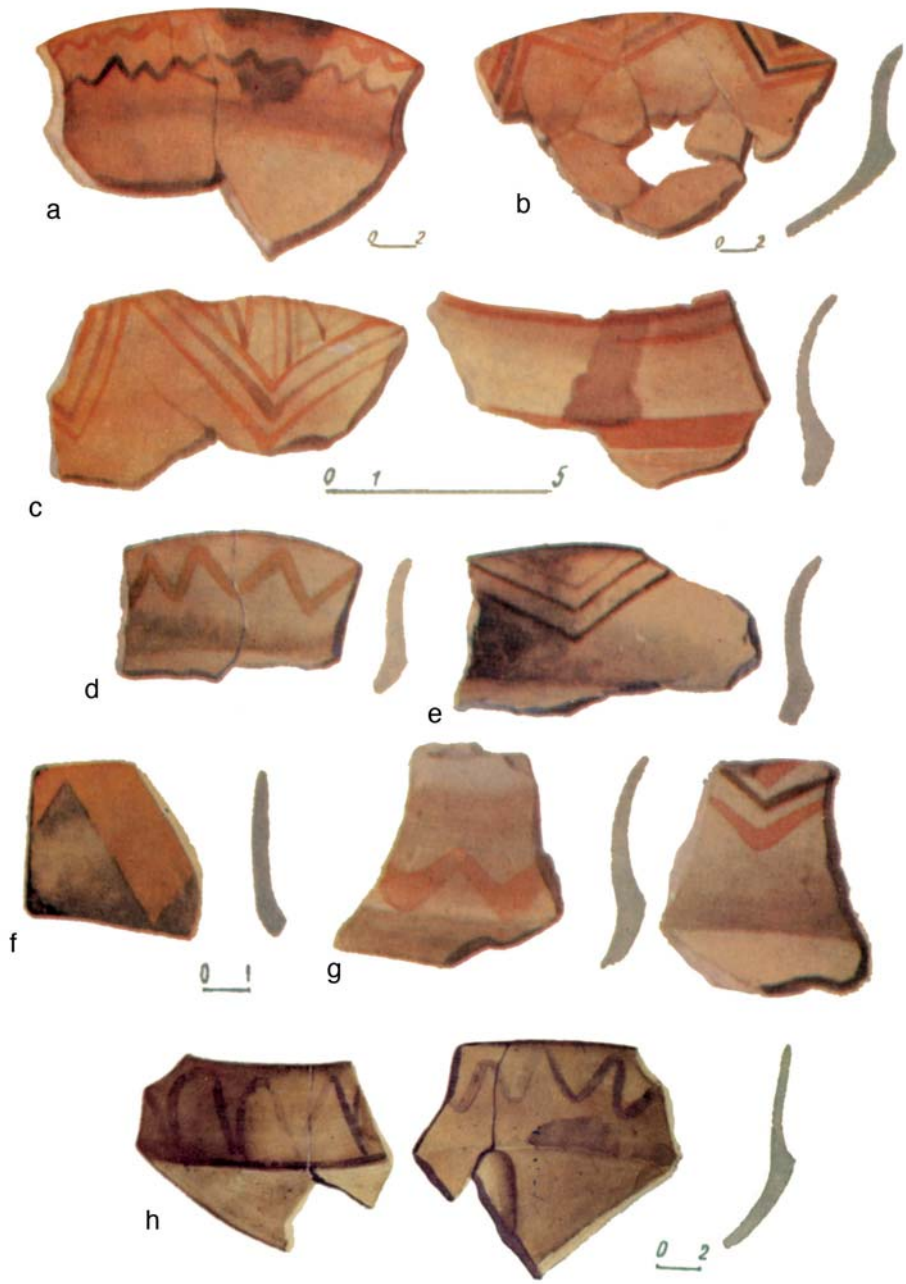

Fig. 17. Painted carinated bowls from Garni (Khachatryan 1970: Pl. III, IV.2).

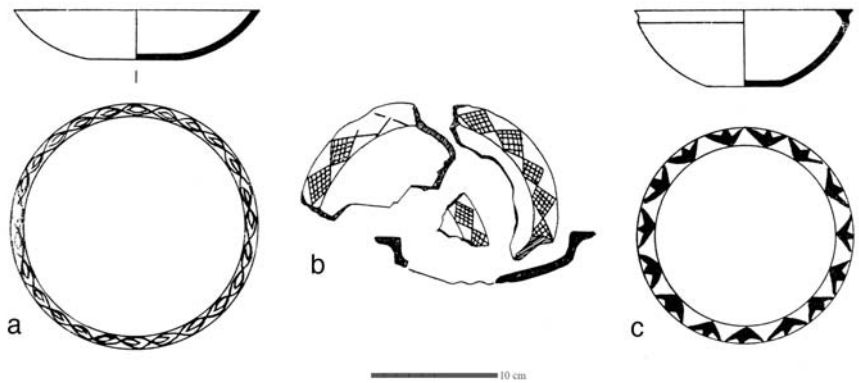

Fig. 18. Painted ledge-rim bowls from Armavir (Karapetyan 1971: fig. 4, 5; Tiratsyan 1965: 1.3).

united on one vessel. Both carinated and ledge-rim painted bowls have recently emerged at Oğlanqala, in nearby Naxçevan (Ristvet et al. 2012: fig. 23), most likely post-dating 330 B.C. (Gopnik 2017).

Festoons or loops are also a common motif on pottery found in Armenia (Khachatryan 1981: fig. 22; Tiratsyan 1988: Fig. 27.4, 28.2, 29.2, 31.4, 5; Pl. XXXII.2, 3), sometimes co-occurring with triangles on the same vessel (fig. 19). Felix Ter-Martirosov (2012: Fig. 14b, 16b, 16e) assigned fragmentary examples of Triangle and Festoon Style found in two successive occupation phases at Yervandashat to the 4th-2nd centuries. One semispherical bowl from Armavir combines black painted triangles and broad hanging loops on a red painted background (fig. 19b) (Tiratsyan 1971a: Fig. II.7, 1988: Pl. 32.3). Another from the same site bears small hanging loops on the inside of the rim, while in the interior, three animals (birds?) perch atop more widely hung loops (fig. 19c) (Tiratsyan 1988: Pl. 32.2).[31] Both are thought to be Hellenistic in date, as are other red-, brown-, or black-on-buff painted bowls with loops and other geometric motifs (fig. 19d) (see also Arakelyan 1969; Martirosyan 1974: fig. 24, 22g) A simpler Festoon Style

[31] This vessel may have been painted by an artist-in-training. The iconography of the creatures is peculiar, although the spikey "backs" resemble the bird feathers on unprovenienced bowls of the "Ardabil" style, as well as one bowl fragment from Yanik Tepe. Note also the sloppiness of the festoons on the rim (Haerinck 1978: fig. 4.4-6; Summers and Burney 2012: fig. 15.9).

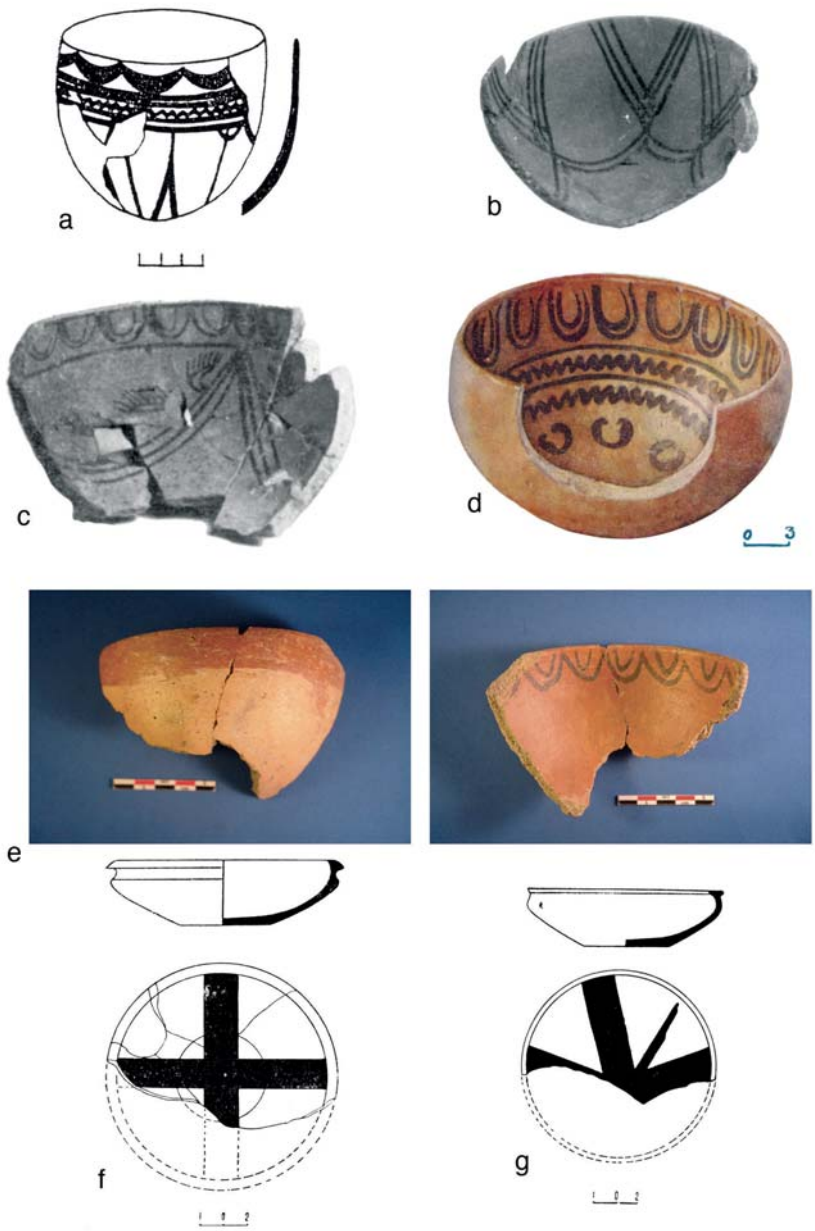

Fig. 19. Painted bowls with loops and radiating crosses from sites in Armenia: a-d. Armavir and Argishtihinili (Martirosyan 1974: Pl. 22g; Tiratsyan 1965: fig. 1.4, 1988: fig. 32.2-3); e. Tsilkar; f-g. Armavir (Karapetyan 1971: fig. 1-2).

bowl emerged from a test trench that I excavated in 2006 at the site of Tsilkar, not far from Tsaghkahovit (fig. 19e). Especially common among painted pottery from Armavir are buff bowls with interior red painted crosses or radiating lines, which find possible parallels in the Yanik Tepe corpus (Summers and Burney 2012: 274, Fig. 21 13.6, 15.5), although the crosses on the bowls from Armenia are rather thicker (fig. 19f-g) (Arakelyan 1969: Pl. 1.1; Karapetyan 1971; Khachatryan 1966, 1970, 1976: Pl. 24.1, 3).

Triangle and Festoon Styles are not present at Tsaghkahovit, but painted pottery does occur, commonly in the form of a red band on the exterior of Type 2 rims (Pl. 2.2). There is also a small collection of sherds, recovered from both floors and alluvial deposits, bearing red painted linear designs on buff backgrounds (Pl. 13.55). Given the postulated date of abandonment no later than the early 4th century, the scarcity of painted pottery at Tsaghkahovit is unsurprising, and lends support to the view that the triangle style takes off in earnest in this region of the Caucasus only after this time.

In some instances, painter-potters maintained the representational concerns of their sculpture-potter predecessors, incorporating zoological and faunal elements into their designs, alongside triangles. A pastoral imagination is on view on a bowl from Yanik Tepe, where the painter combined the standard triangle motif on the vessel's wide flaring rim with a wild or domestic male goat (*Capra aegagrus* or *Capra hircus*) in the center of the interior (fig. 20a) (Burney 1962: Pl. XLV.33). Surrounding the interior edge of the rim are short diagonal lines that can be recognized imaginatively as windswept grasses. Unprovenienced bowls (possibly from Iranian Azerbaijan) offer a similar arrangement (fig. 20b-d) (Haerinck 1978: fig. 3.1-2, fig. 4.1). Karapetyan attributes to Achaemenid-era potters two lids of incense burners from Armavir, one of which is adorned with seven deer walking in single file over a ground line of bounded triangles (fig. 20e) (Karapetyan 2003: fig. 30.5).[32] A fragment of a jug from Mcgadijvris gora in Georgia uses pendant triangles below the ground line, perhaps placing the animals in a valley rather than on a range (fig. 20f) (Ramishvili et al. 1997: Pl. 149.1 shown in Narimanishvili and Shatberashvili 2004, fig. 10.1). Such associations of animals with triangles presses us to regard the Triangle

[32] In design composition, the vessel closely resembles an unprovenienced jug in what Haerinck calls the "Ardabil" style (Haerinck 1980: fig. 9.5).

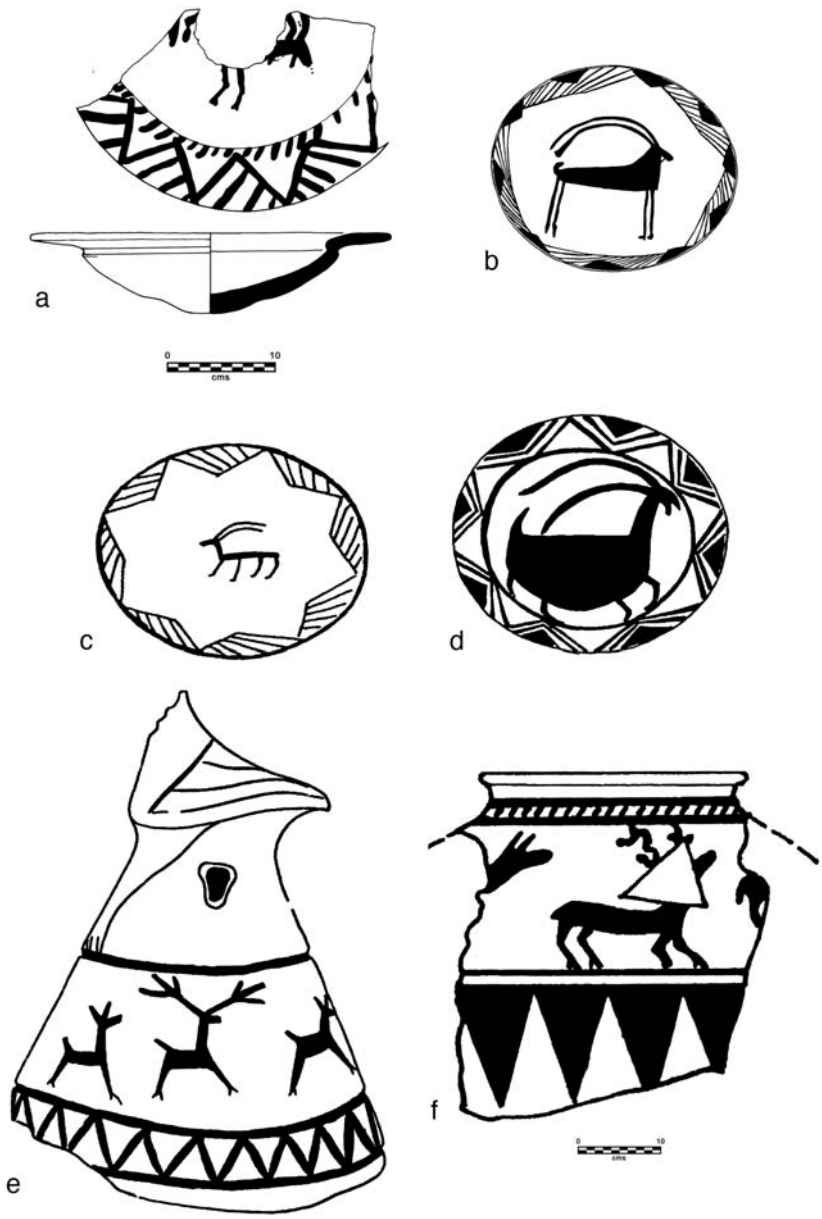

Fig. 20. Painted triangle style vessels with animal iconography: a. Yanik Tepe (Summers and Burney 2012: fig. 14.7); b-d. unprovenienced, said to be from Iranian Azerbaijan, no scale (Haerinck 1978: fig. 3.1-2, 4.1); e. Armavir, approx. 9cm high (Karapetyan 2003: fig. 30.5); f. Mcgadijvris gora (Narimanishvili and Shatberashvili 2004: fig. 10.1).

style as the mark of an iconographic interest not in geometry per se, but in the manifest, angular geometries of mountain landscapes.

Another design combination hints at the possible landscape connotation of the triangles through depictions of various kinds of flora. Some Triangle Ware vessels from Yanik Tepe carry a naturalistic sprig-like motif (fig. 21a-b) (Summers and Burney 2012: 273-4).[33] The potter of an unprovenienced Triangle Ware bowl possibly from Iranian Azerbaijan interspersed an exuberant array of nested and cross-hatched pendant triangles with four bulging petals adorned with either a schematic drawing of barren trees or the venation of a leaf (fig. 21c) (Kroll 1975). Perhaps the clearest indication that triangles were at least sometimes meant to represent mountains is to be found on a bowl from Armavir (fig. 21d), which the excavators date to the 4th-3rd centuries (Karapetyan 1971: 278, fig. 6; Tiratsyan 1988: Pl. XXXVI). In the center of the bowl are two facing rows of three triangles resting on parallel ground lines. Each of the six triangles is formed from three nested elements—an inner straight line, an outer line with "spikes", and an intervening wavy line. In the space between the mirrored triangles is a wavy motif that resembles the shape of leaves or grain seeds. Taken as a whole, the scene suggests a landscape representation of two forested mountain ranges between which lies either a river valley or a cultivated field.[34]

If landscape representation may indeed be at play in these floral and faunal examples, it may likewise account for the recurring design composition on several jugs, consisting of upright triangles arrayed in two, three, or four tightly stacked registers. The arrangements occur on vessels from Yanik Tepe (fig. 12h-j) (Summers and Burney 2012: Fig. 8.1, 8.6), Argishtihinili and Erebuni (fig. 4c-d), from burials at Abulmugi, Varismaanrtkari, Kushchi, and Bazaleti in Georgia (fig. 14b) (Narimanishvili and Shatberashvili 2004: Fig. 3), and among the unproveneinced Triangle Style (or "Ardabil" style) vessels thought to be from northern Azerbaijan (fig. 12k-l) (Haerinck 1978: fig. 1.1-2). The close clustering and vertical stacking of the triangles may provide a two-dimensional, stylized represen-

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[33] The vessel shown in dif. 21b (YT 113) is in the World Museum, Liverpool, Register 62.164.21. The photograph is courtesy of G. Summers, who would like to thank Marion Servat-Fredericq for facilitating his study in 2016.

[34] A painted bowl from a burial at Artashat may be an unfinished version of the same overall motif (Khachatryan 1981: fig. 22.1; Tiratsyan 1985: Pl. XXXIV.15).

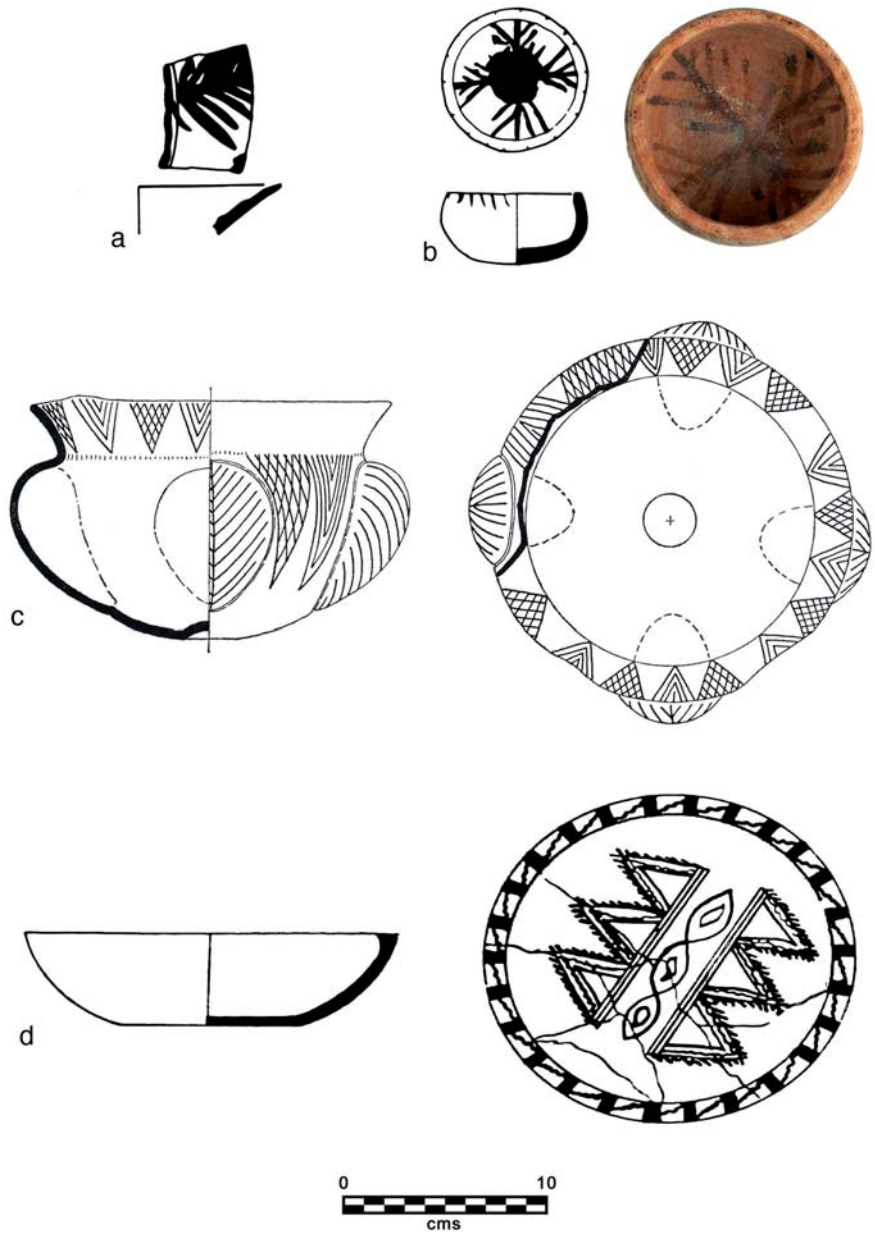

Fig. 21. Painted triangle style vessels with landscape iconography: a-b. Yanik Tepe (Summers and Burney 2012: fig. 14.12, 17.1); c. unprovenienced, said to be from Iranian Azerbaijan (Kroll 1975); d. Armavir (Karapetyan 1971: fig. 6).

tation of the variegated, craggy vistas in densely mountainous and alpine landscape. A similar effect is created by the large, nested, or adjacently arranged upright triangles that extend across much of the body and shoulder of many jugs from Georgia (fig. 14a) (Narimanishvili and Shatberashvili 2004: Fig. 1, 2).

Craft Learning and Stylistic Change

Studies of craft learning and the transmission of knowledge permit, *inter alia,* investigation into the social dynamics that account for continuity and change in material culture attributes (Minar and Crown 2001). For the case at hand, material remnants of learning, such as differential quality and uniformity of form and surfaces designs, control over firing conditions, or fingerprint measurements, cannot be systematically evaluated with the published datasets, as they have been in other parts of the world (e.g. Crown 2001, 2007; Kamp 2001). But following Helene Wallaerte-Petre's (2001) work on craft transmission, it is possible to theorize the process of learning, however coarsely, and particularly the degree to which training structures encouraged or discouraged individual reinterpretation versus standardization.

Drawing on relevant work in developmental psychology, Wallaerte-Petre describes learning based on open versus closed abilities. Closed abilities are shaped to respond to predictable situations, and produce standardized results. The ability to adapt is limited. Learning in such systems is based on observation-imitation processes, and learners are motivated by social goals, such as to please others. Open abilities are associated with adaptability in unknown situations, and will be based on trial-and-error training in which the apprentice may be motivated by his or her own goal, and an openness allows for outside influence (Wallaert-Petre 2001: 482-3). These models provide one means of explaining style duplication versus change, although they of course cannot account for the specific social circumstances that affected how such cross-cultural parameters of apprenticeship might have taken shape in the context at hand (Wallaert-Petre 2001: 472).

As we have seen, judging by those aspects of the operational sequence that are macroscopically visible on the pottery under consideration, the political upheaval occasioned by the collapse of the Urartian Empire had relatively little effect on the potter's craft. Potters continued to produce the same forms of cooking, serving, and consumption vessels, with only minor

morphological innovations in the 7th century: bowls were sometimes given horizontal handles, and the range of vessels for storing and pouring liquids expanded to include upward-spouted and double-handled jugs. But surface treatments remained largely unchanged, with slipped and red-polished vessels continuing to dominate tablewares. Firing conditions may have been adjusted somewhat to shift toward a slightly browner palate. By and large, the late 7th and early 6th centuries appear to have been a time of general conservatism in ceramic craft production and transmission. In this time of significant political change, potters and users preferred to preserve tried and tested techniques and habits rather than bring creative experimentation to the craft.

What explains such continuity across a period of political rupture? The ethnogenetic concerns of prevailing accounts implicitly point to the endurance of culture and the stability of tradition as nebulous but powerful forces (e.g. Tiratsyan 1968, 1978a, 1978b). An alternative approach can consider the social conditions of pottery making, and the ways in which training structures continued to support the style duplication we have come to observe. The continuities suggest that there was little disruption in the mechanisms of transmission from skilled potters to apprentices in the late 7th to mid-6th centuries. We might further speculate that the abilities of highland potters were shaped on a "closed" pattern based on "observation-imitation" with limited opportunity for individual reinterpretation. Cultural pressures account for considerable stability and predictability in the craft. Finally, some of the distinctive attributes of Urartian pottery that are visible to the naked eye, like the application of slips and the use of a polishing tool to produce smooth, undifferentiated surfaces (on finewares), suggest an automaticity in terms of motor skills that, while not necessarily the result of the social structure of knowledge transmission, is not easily changed once learned (Gosselain 1998; Minar 2001; Minar and Crown 2001: 378).

Circumstances changed in the early Achaemenid period. Against a backdrop of broadly continuous slip treatments, firing conditions, and vessel forms—with relatively minor modifications to the shapes of *pithoi*, carinated bowls, and jugs—a new technology of surface modification became acceptable that entailed either clay displacement, the application of pressure, or the use of joining appliqués to produce figurative or abstract features in three dimensions. The likely "trigger" for this change in technological style was the increased production and/or increased circulation

and visibility of metal vessels with faunal, floral, and geometric elements, a dimension of Achaemenid-era elite material culture that is distinctive both in many of its details and in its apparent proliferation compared to earlier phases of the Iron Age. Representation of such vessels, as occur on the Apadana relief at Persepolis, as well as provenienced and unprovenienced objects, include precious-metal *phialai* and other bowls, sometimes adorned with petals, as well as double-handled jugs with plain or fluted bodies and animal-adorned handles (Amandry 1959; Curtis et al. 1995; Dalton 1964; Gergova 2010; Gunter and Root 1998; Muscarella 2000; Simpson 2005; Treister 2010; Treister and Yablonsky 2012). As discussed elsewhere (Khatchadourian 2016), Tsaghkahovit's double-handled jugs with zoomorphic relief are undoubtedly "proxies" of the metal versions carried by the Lydian and Armenian delegates on the Apadana.

In a 'moment' of innovation, early Achaemenid potters—experts or learners—looked outside their own craft to a different pyrotechnic industry. Given the pronounced and enduring emphasis on style duplication suggestive of "closed abilities", the "renegades" (Wallaert-Petre 2001: 489) who opened the way for outside influence may have been a source of tension in the crafting community. Experimentation was required in order to bring to clay (in its leather-hard state) metallurgy's compressive forces of forging and shaping, as well as repoussé and embossing. Let us suppose that a generation of potters across the region embarked on this creative endeavor—self-learning new motor skills (with new and existing tools) at the point of surface finishing. There would have been a period of time during which prevailing training structures were disrupted, as the ancestral ways of doing proved insufficient for attaining desired outcomes for certain kinds of consumption vessels. Experimentation by expert potters may have also led to trial-and-error training of apprentices, and thus a shift to the shaping of "open abilities", at least for that stage of the training process that pertains to surface enhancements (overall continuity of vessel shapes suggests the persistence of closed abilities in the forming process). The sample size is admittedly small, but the available evidence for the new sculptural sensibility of the early Achaemenid period does point to variability in the quality and forms of modeling and relief decoration, suggesting "individual reinterpretation of the models transmitted by the teacher" (Wallaert-Petre 2001: 483).

The shift in training strategies in the early Achaemenid period created the conditions for further openness and receptivity to experimentation in the

transmission of knowledge. Supposing that the painted traditions connected to Triangle and Festoon ware did indeed originate in Iran, it is possible that late Achaemenid potters of eastern Anatolia and the Caucasus could readily incorporate the painting technique in the context of the 'new' training structures that had begun to shape "open abilities" in the surface enhancement of vessels. Regardless of the directionality of influence, it is also possible that late-Achaemenid potters who had experimented with the metallurgical ways of bringing representation to their craft recognized the limits of pressure modeling and appliqués, in terms of time investment, representational possibilities, and the need to preserve the structural integrity of the vessels.[35] Not only did the zoomorphic modeled forms of Achaemenid pottery provide the decorative antecedents to painted traditions of the later first millennium, as Tiratsyan proposed (1988: 41), but the sculptural sensibility provided the educational opening that, a few generations later, made painting an acceptable alternative.[36]

Even more than the sculptural styles, painted pottery would also have altered the potter's habitus. To achieve the new aesthetic, late Achaemenid potters had to add several steps to the production process. They had to acquire colorants, prepare them into pigments (reds, browns, and blacks), and apply the paint, probably after firing (Rice 2005: 148). There is no reason to believe this would have been particularly time consuming once the routine was established (Dietler and Herbich 1989; cf. Wobst 1977), but these steps would have required new forms of knowledge and the automatization of new motor skills. They may also have altered the organ-

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[35] It is no coincidence that all of the protomes on the zoomorphic "sculptural" vessels are highly fragmentary. Note the fracture points on Pl. 10.53b-d, where small elements appear to have been affixed. It would be fruitful to assess whether sculptural pottery becomes less common in the Hellenistic/Parthian periods upon the widespread adoption of paint, or perhaps more restricted in its use to select vessel forms like the rhyta, known from excavated Parthian contexts (Haerinck 1983: 27, fig. 2.2, 174-176). Zoomorphic modeled attachments do occur in these later centuries in Armenia, as with the bull handles on pithoi from Dvin (Kocharyan 1974: 93-94).

[36] Although beyond the scope of this paper, it is worth noting the pronounced similarities in motif between the geometric designs of Triangle Ware and those of the earlier painted tradition of the Middle Bronze Age—particularly monochrome and polychrome triangles filled with hatched lines or net patterning. It is entirely possible that late Iron Age inhabitants of the regions where the Middle Bronze Age painted tradition obtained encountered these materials from looted tombs of surface collections, and that the artifacts provided a source of inspiration to contemporary potters looking to ground the newly revived painting technique in a putative "tradition".

ization of production in those households or workshops where painting was incorporated. A shift to painting may also have "opened" processes of learning still further, cultivating a certain degree of creativity during apprenticeship, judging by the apparent decorative variability within the bounds of the style.[37] Finally, the decorative technique would have introduced a new quality for defining skill and identity within the community of practice, and created a new categorical distinction—painted versus not painted—that, given the appreciably differing steps in the *chaîne opératoire*—was in all probability an emic one.

Conclusion

It is by now axiomatic in archaeology that material culture change does not proceed in lock step with the vicissitudes of eventful history, and yet in historical archaeology it is precisely the known pivot points that often animate archaeological research because significant political events would seem to provide a plausible explanation for the proximate causes of change. But of course, there is no *a priori* reason why the intergenerational transmission of craft knowledge should be affected by the tumult of political life. The changes observed in ceramic technology and style during the first millennium on the northern Near Eastern highlands do not appear to correlate strongly with the region's known historical ruptures. Urartu's collapse had little impact on the potter's craft and the structures of learning. The rise of the Achaemenid Empire may be the distal cause of the sculptural sensibility that I associate with a shift to the shaping of more "open" abilities in pottery manufacture, insofar as the proliferation and circulation of metal vessels with embellished surfaces is linked to Persian imperial commensality and political economy. But the painterly sensibility of late Achaemenid (and later) potters cannot be associated with the presumed commotion of political upheaval, arising instead, it would seem, out of developments in craft technology, cultural interaction, and the intergenerational transmission of knowledge.

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[37] Davut Yiğitpaşa (2009, 2015, 2016, n.d.-b) has identified among the museum collections of largely unprovenienced materials in eastern Turkey 46 design elements (geometric, faunal, floral) occurring on 13 different vessel forms with bichrome and polychrome painting.

The social forces that contributed to the turn to sculptural and painted pottery, and the possible meaning of the design elements are beyond the scope of this paper. Suffice it to say, elsewhere I have suggested that pottery derived from metal prototypes, or "proxies", entailed not merely a straightforward desire to emulate imperial aesthetics and practices, but a more subtle, human-clay engagement that involved inventiveness, inversion, and selective conformity (Khatchadourian 2016: 183). For its part, the popularity of the painted triangle motif, especially in combination with faunal and floral elements, may point to the formation of a new collective identity in the late 5th or 4th centuries across the northern Near Eastern highlands linked to shared mountain lifeways. It is intriguing to consider whether Achaemenid imperialism created a heightened sense of commitment to the mountains, and an awareness of shared landscape practices that crosscut local affiliations. People may also have understood that they belonged to a polity that had discursively fashioned them into a very limited number of collective categories, essentially either Armenian or Mede, as *we* know from Achaemenid royal reliefs and country lists. They may further have known that the burden of paying taxes and tribute to the crown, likely in the form of horses, was experienced similarly by other mountain dwellers whose economic possibilities and constraints were not unlike their own. It is against this backdrop that the Triangle Style pottery may take on significance, as a medium for taking hold of, reproducing, and recognizing shared interests that spanned the valleys and ranges of the northern Zagros, Anti-Taurus, and Caucasus mountains.

Typology and the study of craft learning represent complementary approaches to style duplication and change. The latter grounds the classificatory power of the former within a field of social practice. More than merely recognizing the agency of the potter, consideration of the relationship between apprentice and learner accords primacy to the collaborative, intergenerational dynamics within crafting communities that result in stylistic continuity and change. A focus on transmission disencumbers the typological enterprise from the theories of culture associated with traditional culture history, and locates a concern for the work of social reproduction *within* typology, the quintessential basic research of ceramic analysis. Such an orientation toward pottery typology of early historical periods in the northern Near Eastern highlands, explored here through learning models that inform the broad contours of training structures, provides an opening for future analytical work that peers more closely into the microprocesses of the *chaîne opératoire*.

APPENDIX

Pottery Sampling at Tsaghkahovit

This catalogue draws on the data contained in the Project ArAGATS open access online data portal: https://aragats.gorgesapps.us/. The sampling procedure was based on two considerations. First, contained in the database are individual records for virtually every rim sherd and complete vessel collected from a stratigraphic context deemed to be cultural rather than alluvial (e.g. floors, pits, and other features).[38] In addition, the database contains records for virtually every specimen of pottery from any alluvial deposit that was sufficiently preserved to permit some assessment of overall vessel morphology, as well as for any sherd that was otherwise morphologically distinctive. As of this writing, the total assemblage of coded pottery from Tsaghkahovit dating to the 7th-4th centuries consists of 783 entries, all created by the author. It is possible to view the full range of variables recorded for each specimen by accessing the project database. All vessels and sherds are currently stored in the Project ArAGATS repository at the Yerevan History Museum.

In the below catalogue, parallels to the types in the Tsaghkahovit assemblage are noted only for select forms.

Catalogue

Type 1 (Plate 1)

Carinated bowls with pointed or rounded rims are the most common type in the Tsaghkahovit assemblage (n=86). Only one vessel, recovered from a burial, is complete (1a). In no other instance is there a base-to-rim profile, and in many cases, not enough of the vessel is preserved to establish depth. Nonetheless, it is clear that the type occurs in a range of depths. Two fragments of black-polished *mesomphaloi* likely belonged to vessels of this type (1e-f). Based on the 68 samples whose diameters could be measured, the Tsaghkahovit carinated bowls range from 10-36 cm, with an average diameter of 22.5 cm, a median of 22 cm, and a mode of 20 cm. Allowing for variation in the point of measurement, the thickness of the

[38] A small collection of sherds from the Tsaghkahovit excavations remains to be registered in the database.

body ranges from 3-11 mm, with an average thickness of 6 mm. Fabrics are generally well sorted with very fine, fine, and (predominately) medium inclusions. The vast majority are slipped and polished or burnished on interior and exterior. Reds are dominant, at 54%, with the two most common colors being Red 10R 4/6 and Red 2.5YR 4/6. Carinated bowls in the brown range make up 31% of the analyzed collection, followed by blacks (9%) and grays (6%). (1g-j). Parallels are to be found at numerous sites in the Caucasus and wider Near East.

Type 2 (Plate 2)

Vessels of this type have upward oriented rims that are pointed or slightly rounded in shape. Rims transition gently from a convex body. These bowls occur in deeper and shallower varieties (2a-d), and are common in the corpus (n=46). Three deep variants are nearly complete, and all were found together under the floor of Room G. Based on the 32 samples whose diameters could be measured, the range is from 10-30 cm, with an average diameter of 16.25 cm, a median of 14.75 cm, and a mode of 14 cm. Thus, these bowls are generally smaller than the carinated bowls of type 1. Allowing for variation in the point of measurement, the thickness of the body ranges from 4-10 mm, with an average of 6 mm, the same as carinated bowls. Fabrics are generally well sorted with predominately medium inclusions, as with carinated bowls. The vast majority are slipped and polished on interior and exterior. Exterior colors are most commonly browns (especially Brown 7.5YR 5.4) or reds (Yellowish Red 5YR 5/6, Red 2.5YR 4/6, Red 10R 4/6). However, interior colors are most commonly reds (Red 2.5YR 4/6 and Red 10R 4/6). This speaks to the fact that a subclass of this type is notable for its two-toned decorative element (2a). The interiors are red, while the exteriors are brown or buff (Strong Brown 7.5YR 5/6), apart from the exterior of the rim, which is also painted red. Many are red on both sides (2b).

The type is particularly common in Armenia, known from such sites as Erebuni (Stronach et al. 2009: fig. 8.4), Getap (Melkonyan et al. 2010), Karchakhbyur (Karapetyan 1979b: Pl. 1.10), Armavir (Tiratsyan and Karapetyan 1979: fig. 1), and Artashat (Khachatryan 1981: Pl. 14). The latter three have the painted band on the exterior of the rim and are virtually identical to the Tsaghkahovit painted subclass. The form also exists at Oğlanqala (Ristvet et al. 2012: fig. 20.18).

Type 3 (Plate 2)

Bowls of this type have rectangular or flat rims that either follow directly on the axis of the body (3a-b) or rise upward slightly off the body (3c). The bowls are numerous in the corpus (n=53). Based on the 36 samples whose diameters could be measured, the range is from 8-60 cm, with an average diameter of 23 cm, a median of 20 cm, and a mode of 20 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 3.5-12.75 mm, with an average of 8 mm. Thus, these bowls are generally larger and thicker than the first two types. Fabrics are generally well sorted with medium or coarse inclusions. Surfaces are generally slipped and polished. Reds are most common (especially Yellowish Red 5YR 5/6) as are a range of browns. Comparanda for this simple bowl form are to be found at countless sites across the Armenia and the Near East.

Type 4 (Plate 3)

This simple bowl has a rounded or pointed rim that follows continuously from the convex body (4a-b). The type is relatively well represented in the corpus (n=50). Based on the 32 samples whose diameters could be measured, the range is from 8-32 cm, with an average diameter of 15 cm, a median of 14 cm, and a mode of 18 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 3.5-13 mm, with an average of 7 mm. Fabrics are almost always well sorted, but have a wide range of fine, medium, coarse, and very coarse inclusions. Surfaces are generally slipped and polished. Red colors are most common (especially Red 10R 4/6 and Red 2.5YR 4/6), followed by browns.

The form is ubiquitous. Undecorated bowls with upward or slightly inward leaning rims are the most common bowl type of the 6th-4th centuries in Armenia, occurring in polished reds, browns, and black (Karapetyan 2003: 38). Outside Armenia, examples can be found at Bastam (Kroll 2013b: fig. 9.2), Baba Jan (Goff 1985: Fig. 2.19, 21; Fig. 4.3), Erebuni (Stronach et al. 2009: fig. 8.4), Oshakan (Esayan and Kalantarian 1988: fig. XXVIII.2), and Oğlanqala (Ristvet et al. 2012: fig. 20.19), among other sites.

Type 5 (Plate 3)

Less common in the assemblage are bowls with inward pointing triangular rims (5) (n=33). Based on the 31 samples whose diameters could be

measured, the range is from 8-36 cm, with an average diameter of 21 cm, a median of 20 cm, and a mode of 14 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 4-13 mm, with an average of 7.5 mm. Fabrics are almost always well sorted, with predominantly medium and coarse inclusions. Reds and browns are equally represented, especially Red 10R 4/6 and Brown 7.5YR 5/4.

Type 6 (Plate 3)

Also occupying a 'second tier' in prominence within the assemblage after types 1-4 are carinated bowls with squared or otherwise angular rims (6a-b) (n=29). Based on the 24 samples whose diameters could be measured, the range is from 9-65 cm, with an average diameter of 28 cm, a median of 26 cm, and a mode of 24 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 4-14 mm, with an average of 8 mm. Compared to other vessel types presented thus far, this form tends to occur in larger and thicker sizes. Fabrics are generally well sorted, and tend to have medium or coarse inclusions. Surfaces are usually slipped and polished, and reds predominate, especially Red 10R 4/6.

Comparanda exist from such sites as Oshakan (Esayan and Kalantarian 1988: 32-33, Pl. XVIII, fig. 1, 2, 4, 9, 10, 15; Pl. LIX, fig. 3), Kol Pat (surface) (Hakobyan 2002: 291, Pl. 6.6), and Oğlanqala (Ristvet et al. 2012: 20.7).

Type 7 (Plate 3)

A comparable collection of sherds has "double" or hammer-head rims that turn both inward and outward off of the axis of the neck or body (7a-c) (n=29). In most cases, the rim follows directly from the body, but occasionally there is slightly concavity to the neck. The rim can either be straight or angled. Based on the 25 samples whose diameters could be measured, the range is from 15-35 cm, with an average diameter of 24 cm, a median of 22 cm, and a mode of 20 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 2-11 mm, with an average of 8 mm. Fabrics are generally well sorted, and coarse inclusions and medium inclusions predominate. Surfaces are usually slipped and polished, and browns predominate especially in the Brown 7.5YR range.

Comparanda exist from such sites as Oshakan (Esayan and Kalantarian 1988: XXVII.7) and Tille Höyük (Blaylock 2016: 841).

Type 8 (Plate 3)

Fewer in number (n=24) are bowls with cylindrical and straight or concave necks that lead to rounded or rectangular rims (8a-b). Based on the 24 samples whose diameters could be measured, the range is from 15-35 cm, with an average diameter of 24 cm, a median of 23 cm, and a mode of 20 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 2-11 mm, with an average of 8 mm. Fabrics are generally well sorted, and coarse inclusions and medium inclusions predominate. Surfaces are usually slipped and polished, and browns predominate especially in the Brown 7.5YR range.

There are comparanda from several sites in Karli, Georgia (Narimanishvili 1991: type 11, group 1).

Type 9 (Plate 4)

The type consists of an inward pointing rim with a concave neck whose axis is shaped either like an inverted cone (9a-b) or a cylinder (9c) (n=22). Based on the 22 samples whose diameters could be measured, the range is from 15-36 cm, with an average diameter of 25 cm, a median of 25 cm, and a mode of 25 cm. Allowing for variation in the point of measurement, the thickness of the body ranges from 4-12 mm, with an average of 8 mm. Fabrics are well sorted, with mainly medium and coarse inclusions. Surfaces are usually slipped and polished, red predominates (especially Red 2.5YR 4/6), followed by browns.

Comparanda exist as such sites as Armavir (Karapetyan 1971: fig. 2), Erebuni (Stronach et al. 2009: fig. 8.1), Nush-i Jan (Stronach 1978b: fig. 6.13), and Oğlanqala (Ristvet et al. 2012: fig. 20.9).

Type 32[39] *(Plate 4)*

This is the last bowl type that occurs with any regularity in the Tsaghkahovit assemblage (n=15). It is similar to type 4, but has an inward turning rim that is pointed, rounded, or rectangular (32a-b). Based on the 11 samples whose diameters could be measured, the range is from 10-23 cm, with an average, median, and mode diameter of 15. Allowing for variation in

[39] This type was not included in a previous catalogue of Tsaghkahovit ceramics. In inserting the new type here, I have continued the sequential numbering from that catalogue so as not to create confusion with duplicate type numbers across different iterations of the catalogue.

the point of measurement, the thickness of the body ranges from 5-10 mm, with an average of 7 mm. Fabrics are well sorted, with mainly fine, medium and coarse inclusions. Surfaces are usually slipped and polished, reds and browns are both common.

Comparanda exist at such sites as Oshakan (Esayan and Kalantarian 1988: fig. XXVIII.1), Erebuni (Karapetyan 2003: fig. 24.1, 4), Karchakhbyur (Karapetyan 1979a: fig. 1.11), Godin Tepe (Gopnik 2011: type 80), Nush-i Jan (Stronach 1978b: fig. 6.3), Baba Jan (Goff 1985: fig. 2.20), and several sites in Kartli, Georgia (Narimanishvili 1991: type 11, group 1).

Type 10 (Plate 4)

Six sherds have triangular rims that extend outward beyond the neck. They are either straight or angled (10a-c). Diameters range from 12-30 cm. Surfaces are either smoothed or slipped and polished. Fabrics are well sorted and inclusions tend toward coarse sand. Colors are browns and reds.

Comparanda exist at such sites as Godin Tepe (Gopnik 2011: type 60), Tille Höyük (Blaylock 2016: 883), and Pasargadae (Stronach 1978a: fig. 108.3).

"Types" 11-16, 33-44 (Plate 4-5)

The remaining bowls shown on Plates 4 and 5 are each unique instances of a given form. Although therefore not technically types, I follow the type numbering system used in the ceramic appendix contained in Khatchadourian 2008. A few vessels merit brief comment. The egg-shaped bowl (11) and various flat plates (12, 16), two with traces of central depression, are among the very few examples that suggest ephemeral Iron 4 (Hellenistic) activity at the site. Vessel 14 may be a lid, similar to the one from Godin Tepe (Gopnik 2011: type 108). The possible bowl of the MPT type (33) is slipped and polished with interior and exterior colors in Gray 5Y 6/1.

Type 17 (Plate 6)

A small number of pots (n=18) are characterized by drooping shoulders, which are straighter in profile than the convex shoulders of type 18. Rims are either rounded or rectangular. Necks are short. Diameters range from 9 to 36 cm, with an average of 23 cm, median of 20 cm, and mode of 18 cm.

Most are colored browns or grays, and surfaces are often modeled. Most have very coarse or coarse inclusions. Surfaces are slipped but rarely polished.

Type 18 and 23 (merged)[40] *(Plate 6)*

This is the most common style of pot or jar in the Tsaghkahovit corpus (n=78), marked by a distinctly globular shoulder and a simple, unelaborated rim that emerges off of a generally short neck. Compared to type 17, the shoulders are high and convex. Bodies can be more or less squat or tapered. Most specimens are rim-to-shoulder sherds, making it difficult to distinguish the squatter variants (e.g. 18b-d) from more elongated forms (e.g. 18i). Some vessels have incised decorations on the shoulders, with motifs such as herringbone, dimples, and wavy lines. Such basic vessels come in a very wide range of sizes (6-40 cm diameter), with an average diameter of 19 cm, median of 18 cm, and mode of 18 cm. Some vessels of this type may have been cooking pots; large inclusions (almost always very coarse or coarse) would have enhanced resistance to thermal shock. Several examples have fire clouding, friable fabrics, and, in the case of at least 9 vessels, there are ash traces on their exteriors.

Type 19 (Plate 7)

Pots of type 19 (n=12) have convex shoulders whose axis is nearly parallel to the vertical axis of the pot, and cylindrical concave necks that lead to rounded or pointed rims (19a-d). The profile is s-shaped. There are no complete vessels of this type, and the existing sheds tend to be small.

Type 20 (Plate 7)

Pots of this type (n=24) have gently convex shoulders that are oriented basically parallel to the vertical axis of the vessel. There is no neck. Rims either turn outward slightly and are rectangular (20a-b) or turn more sharply outward and are rounded (20c-d). Diameters rage from 14-24 cm, with an average of 18 cm, median of 18 cm, and mode of 14 cm. Exterior surfaces are typically slipped and smoothed, rarely polished, and tend toward shades of brown. Inclusions vary widely, from fine to very coarse.

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[40] I have merged types 18 and 23 from Khatchadourian 2008 because, while there is variation in the degree of restriction at the neck, too many examples are too fragmentary to permit systematic distinction.

Type 21 (Plate 7)

A single pot (and hence not really a type) with a bowed, rectilinear handle decorated with two deep furrows attached to the rim and shoulder. The slipped and polished surface is colored Yellowish Red 5YR 5/6 on interior and exterior.

Type 22 (Plate 7)

This type of globular vessel has a short neck or no neck at all, and the rectangular or rounded rim turns outward, more or less sharply, immediately off the shoulder (22a-f). Diameters range from 12-32 cm, with an average of 19 cm, a median of 18 cm, and a mode of 16 cm. Fabrics contain well-sorted coarse of very coarse inclusions, and surfaces are slipped and smoothed, but not polished. Exterior surfaces are often mottled, but browns predominate. Ash traces exist on one sample. Often these vessels have incised decoration on the shoulder and more rarely on the rim. Decorative elements include lines, wavy lines, oblique hatches, seed incisions, chevrons, points, nail shaped depressions and furrows. Vessels of similar shape with incised decoration are common in the Late Bronze and Early Iron Ages. Given that Tsaghkahovit has substantial Late Bronze Age occupation, I have conservatively eliminated any samples not recovered from cultural contexts that, on the basis of stratigraphy, radiocarbon dating, or associate artifactual materials, clearly date to the Iron 3. Such a selection procedure still results in a sizable collection of distinct vessels (n=22), over half of which (n=12) carry incised decoration.

Comparanda are published from Karchakhbyur (Karapetyan 1979a: fig. 1).

Type 24 (Plate 8)

The number of sherds that populate this type is small (n=4). The form is distinctive for its straight or slightly concave shoulders (rim shapes vary). Surfaces are slipped and smoothed (24a-c).

Type 26 (Plate 8-9)

This type, akin to MPT #3, consists of jugs with relatively thin necks in the shape of an inverted cone (extant rims=10) (26a-d). The vessel can have a number of attributes, including vertical fluting on the shoulder and

body (n=7) (26e-g),[41] handles with zoomorphic features (26h), spouted handles with zoomorphic features (26i), rounded, bowed handles with upright nubs (n=8) (26j-l), rounded, bowed handles with incised decoration (26m), nearly straight handles (26n), and tubular spouts (26o). 26p presumably belongs to this type. Surfaces are always slipped and polished, sometimes highly polished. Reds predominate, but there are also browns and blacks.

Types 45-46 and jug handles (47-53) (Plate 10)

There are individual instances of a jug (Red 2.5YR 4/6) with horizontal flutes on the neck and lobing and gadroons on shoulder and body (the gadroons are faintly discernable among the body fragments in the photograph, especially bottom left) (45), a handled jug with polished banding on the neck (Dark Gray 2.5Y 4/1) (46), a jar with vertical "flutes" formed through pronounced burnishing (Dark Gray 2.5y 4/1) (47) and several rectangular (48-50), trapezoidal (51), or ovoid (52) handle shapes. Some jug handles are adorned with certain or likely zoomorphic elements (53a-d).

Type 27 (Plate 11)

Four jugs from the Tsaghkahovit citadel have long, cylindrical, concave or straight necks (27a-b). Rim diameters range between 8-16 cm, and are either rounded or rectangular in shape. All have course or very coarse inclusions. Exterior colors are reds and browns. Surfaces are generally slipped and smoothed.

Type 28 (Plate 11)

The five jugs of this type are distinguished by their trefoil rims. Three examples are dark gray. All but one sherd of this type is slipped and smoothed, without evidence of polishing. Like Type 27, the known instances are localized to the Tsaghkahovit citadel. Parallels for the type have been found in Armenia at Jrarat, Karchakhbyur, Armavir and Tmbadir (fig. 7d) (Karapetyan 2003: 35, fig. 17).

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[41] This attribute was previously given a type designation (Khatchadourian 2008), but it is more properly treated as a variation on jugs with such neck profiles.

Type 29 (Plate 11)

Only one spouted jug sherd is sufficiently preserved to discern the relationship between the rim and the spout (29a), however several other spouts (n=5) likely belong to vessels of this type (29b-e), which is also the second type in Kroll's MPT (fig. 3). The vessel of 29f was found in the same locus as 26h and 26i. Although the top of the vessel is lost, there is a slight lip at the point of fracture that suggests the vessel is transitioning to a neck. It is not out of the question that this vessel is the bottom part of 26i, but the sherds do not join.

Type 30 (Plate 11)

The seven small jars in the Tsaghkahovit collection (30a-d) have rim diameters between 4 and 6 cm. Rims are rounded or rectangular. Fabrics and colors vary, but exterior surfaces are generally slipped and polished.

Type 31 (Plate 12)

These very large storage vessels, or *pithoi*, differ from jars and pots on a matter of scale (n=32). Rim diameter alone does not capture the scalar difference between these and other vessels, although the average rim diameter, at 35 cm, is considerably larger than other pots and jars. The range is 21-52 cm, with a mode of 42 cm. The average thickness of these storage vessels is also large, at 1.4 cm. Fabrics tend to be well sorted, with mainly coarse or very coarse inclusions. Exterior surfaces tend to be slipped and smoothed, rarely polished. Browns and light browns predominate. Rim shapes vary. Several *pithoi* have a raised belt on the shoulder or on the shoulder body break that is decorated with incised oblique hatches. Notably, nearly half the assemblage (n=15) is from a single room of the settlement, Room N.

Type 54 (Plate 13)

See discussion on p. 202-204.

Painted Pottery (Plate 13.55)

See discussion on p. 209-227.

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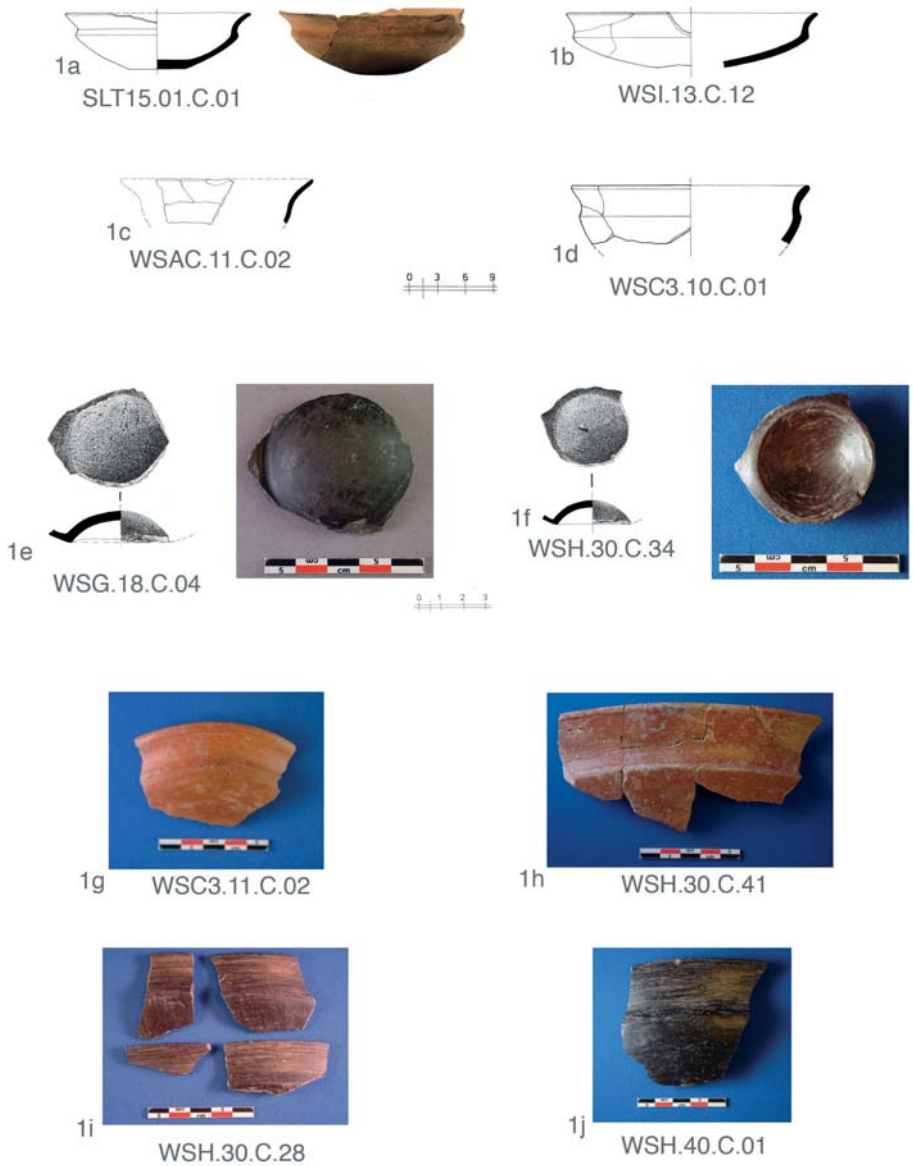
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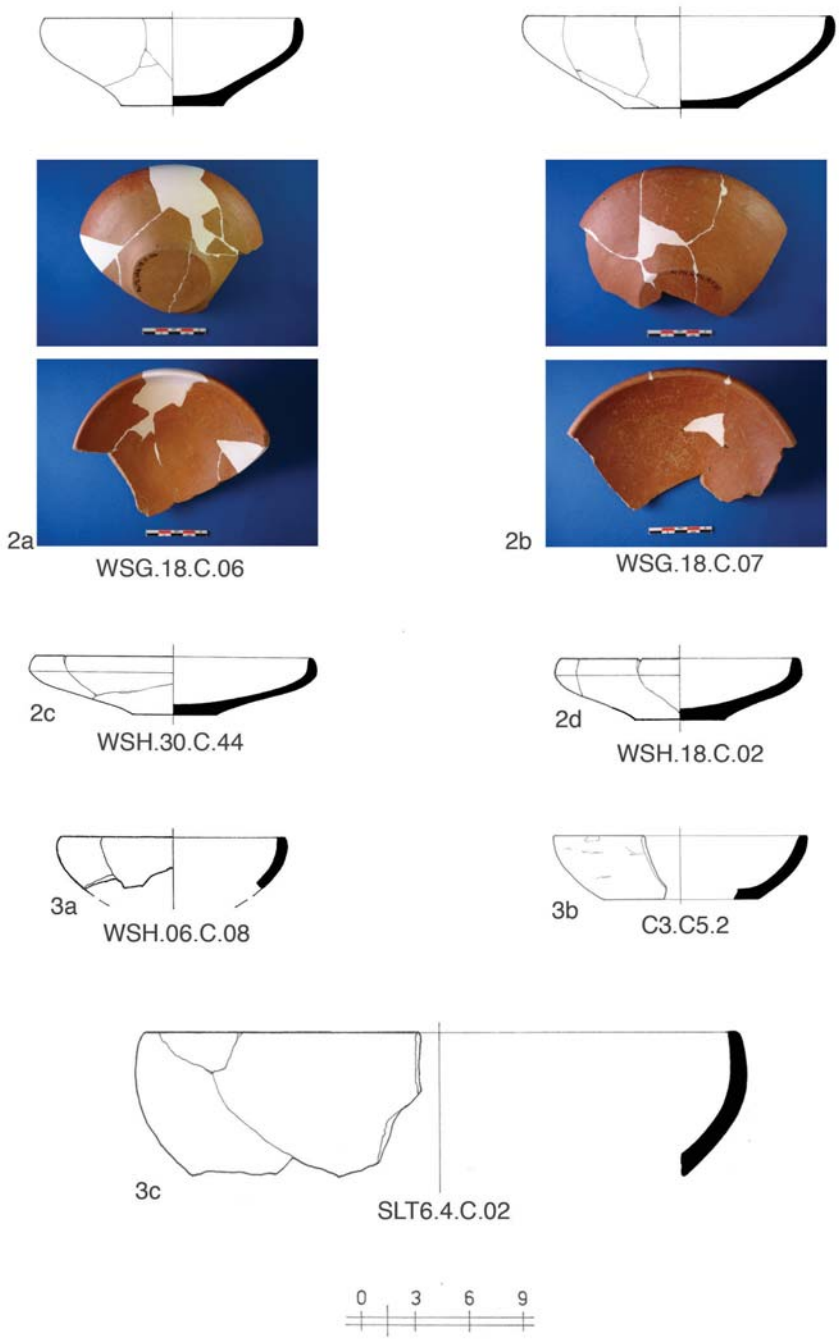
1c
WSAC.11.C.02
1d
WSC3.10.C.01
1e
WSG.18.C.04
1f
WSH.30.C.34
1g
WSC3.11.C.02
1h
WSH.30.C.41
1i
WSH.30.C.28
1j
WSH.40.C.01

Pl. 1.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2b
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2c
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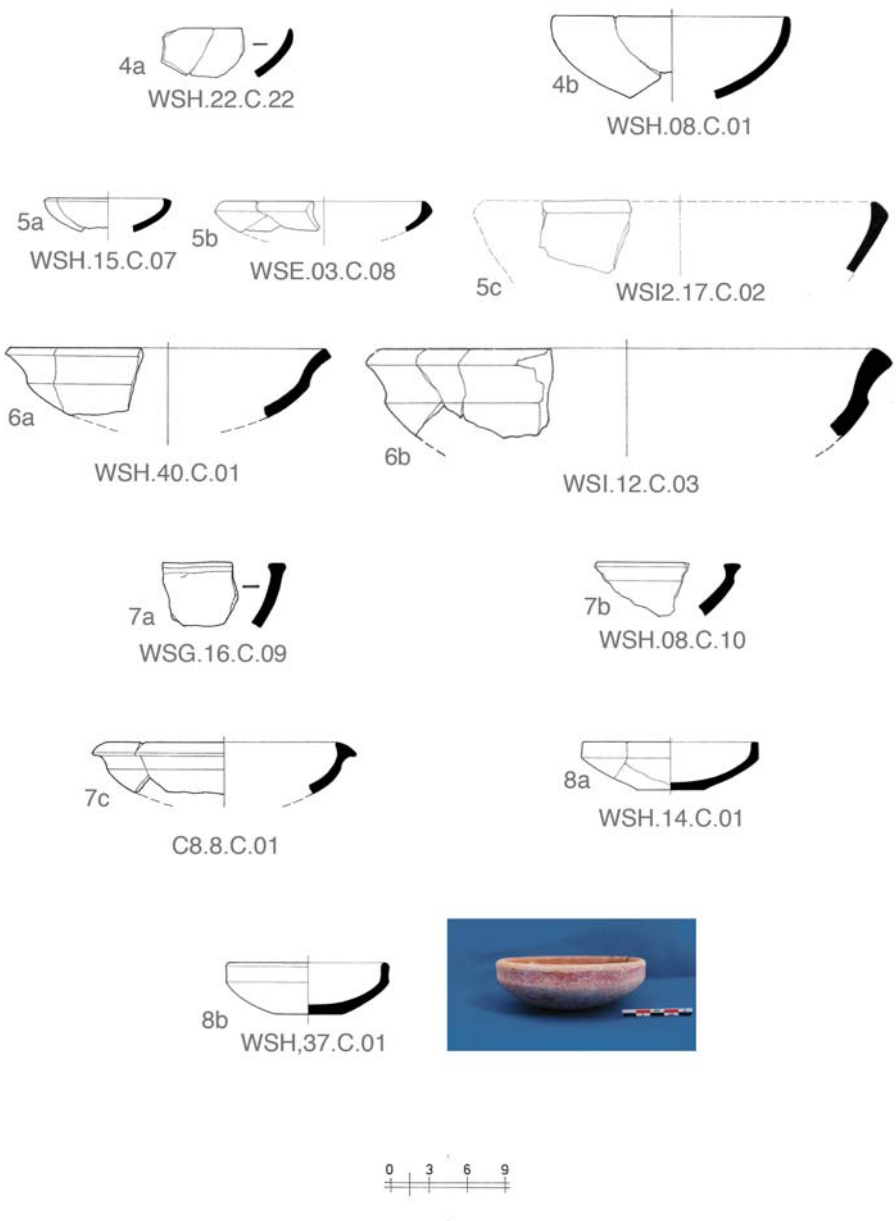
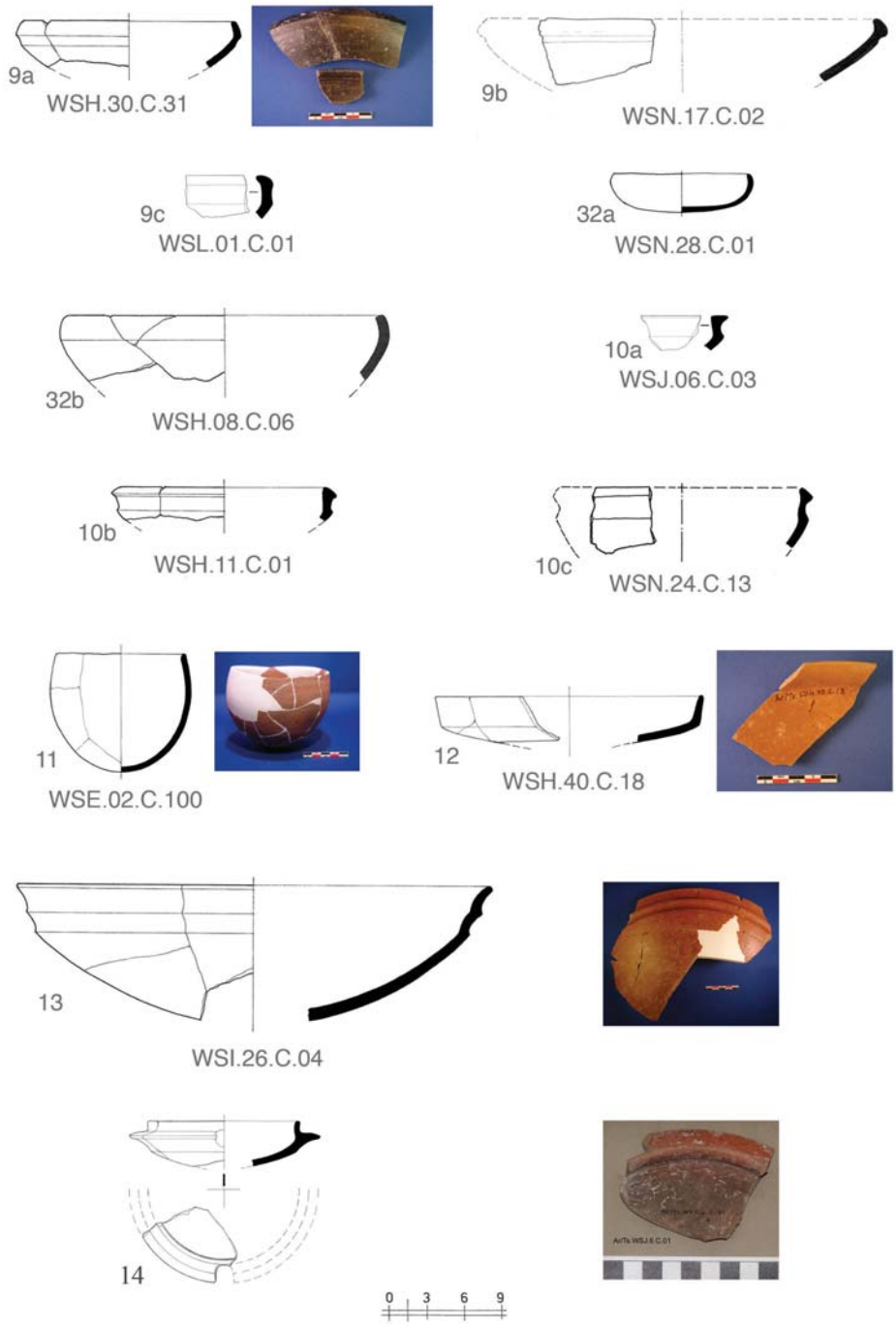
2d
WSH.18.C.02
3a
WSH.06.C.08
3b
C3.C5.2
3c
SLT6.4.C.02
0 3 6 9

Pl. 2.


4a
WSH.22.C.22
4b
WSH.08.C.01
5a
WSH.15.C.07
5b
WSE.03.C.08
5c
WSI2.17.C.02
6a
WSH.40.C.01
6b
WSI.12.C.03
7a
WSG.16.C.09
7b
WSH.08.C.10
7c
C8.8.C.01
8a
WSH.14.C.01
8b
WSH,37.C.01
0 3 6 9

Pl. 3.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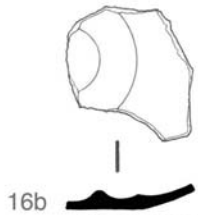
9b
WSN.17.C.02
9c
WSL.01.C.01
32a
WSN.28.C.01
32b
WSH.08.C.06
10a
WSJ.06.C.03
10b
WSH.11.C.01
10c
WSN.24.C.13
11
WSE.02.C.100
12
WSH.40.C.18
13
WSI.26.C.04
14
0 3 6 9

Pl. 4.


16a WSH.30.C.13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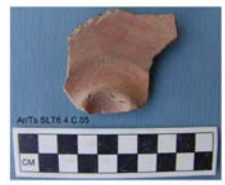
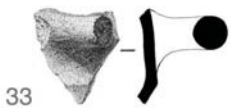
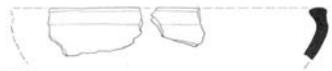



33 WSH.08.C.21


34 WSC2.10.C.01


35 WSI.19.C.12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37 WSI2.11.C.01

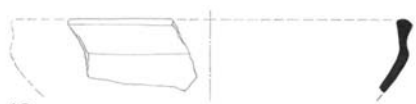

38 WSI2.14.C.01


39 WSH.29.C.03


40


WSAC2.23.C.01


41 WSAC.04.C.02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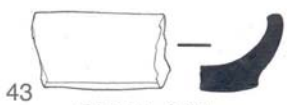
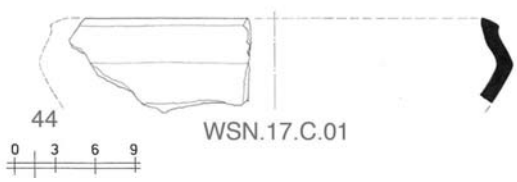
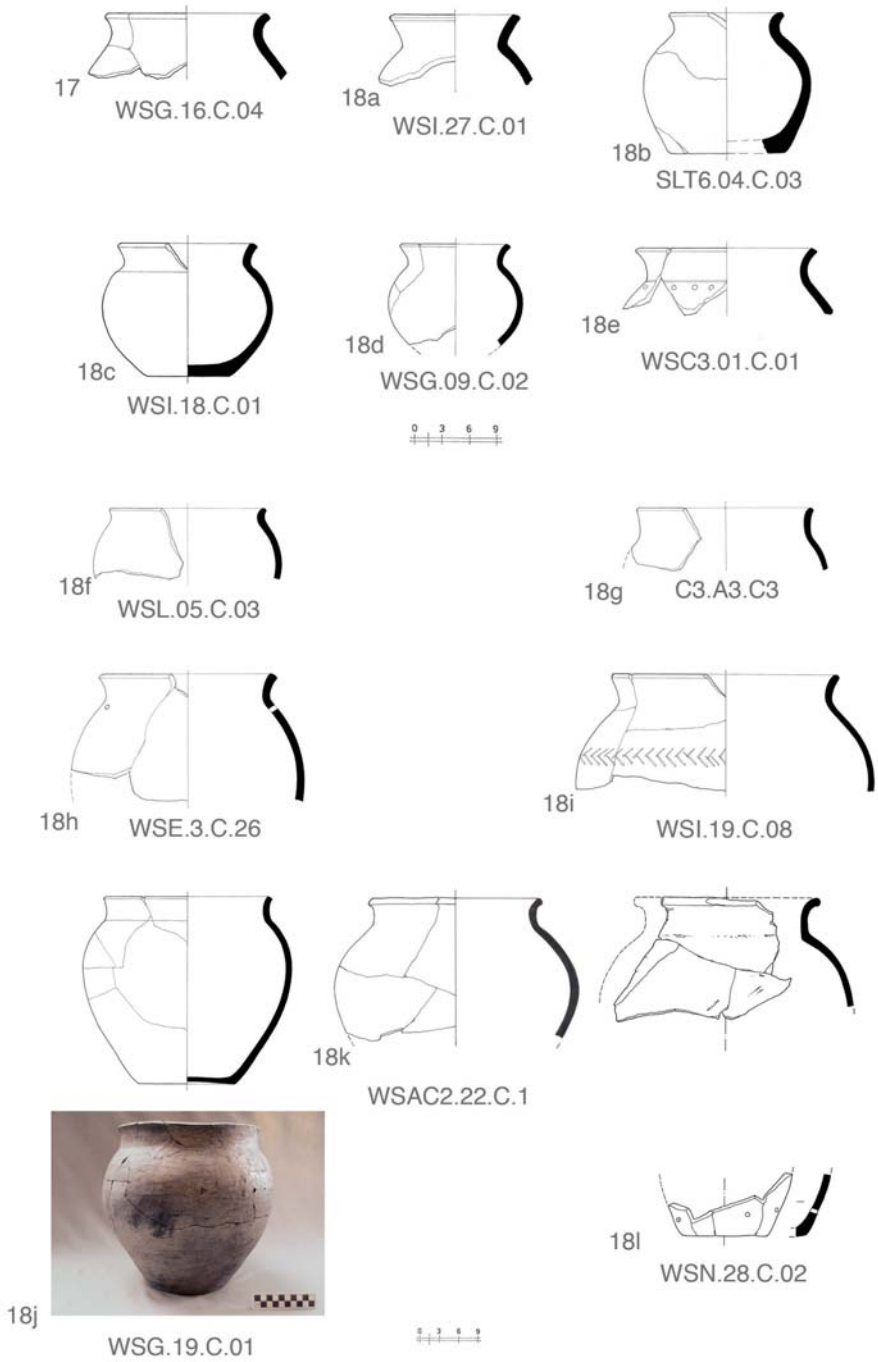

43 SLT7.4.C.01

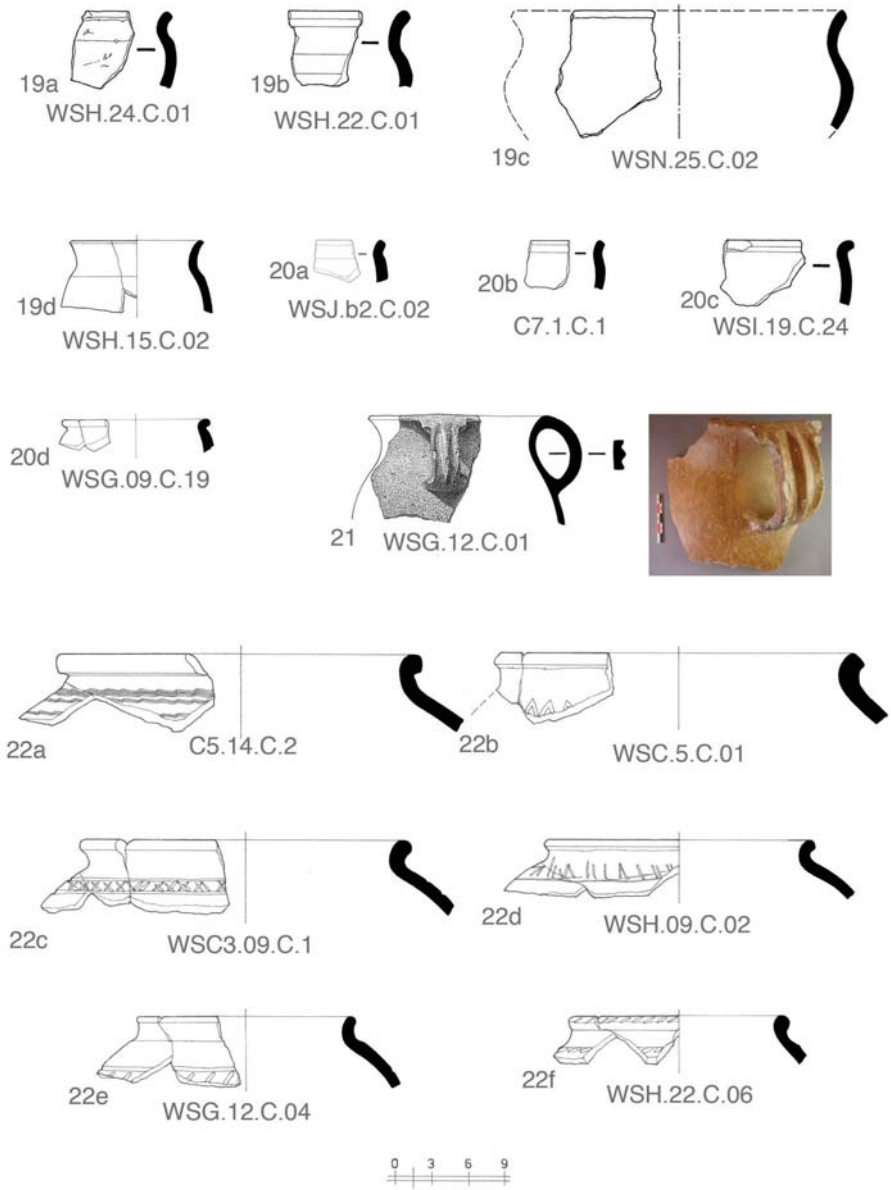


44 WSN.17.C.01

Pl. 5.


17
WSG.16.C.04
18a
WSI.27.C.01
18b
SLT6.04.C.03
18c
WSI.18.C.01
18d
WSG.09.C.02
18e
WSC3.01.C.01
0 3 6 9
18f
WSL.05.C.03
18g
C3.A3.C3
18h
WSE.3.C.26
18i
WSI.19.C.08
18k
WSAC2.22.C.1
18l
WSN.28.C.02
18j
WSG.19.C.01
0 3 6 9

Pl. 6.


19a
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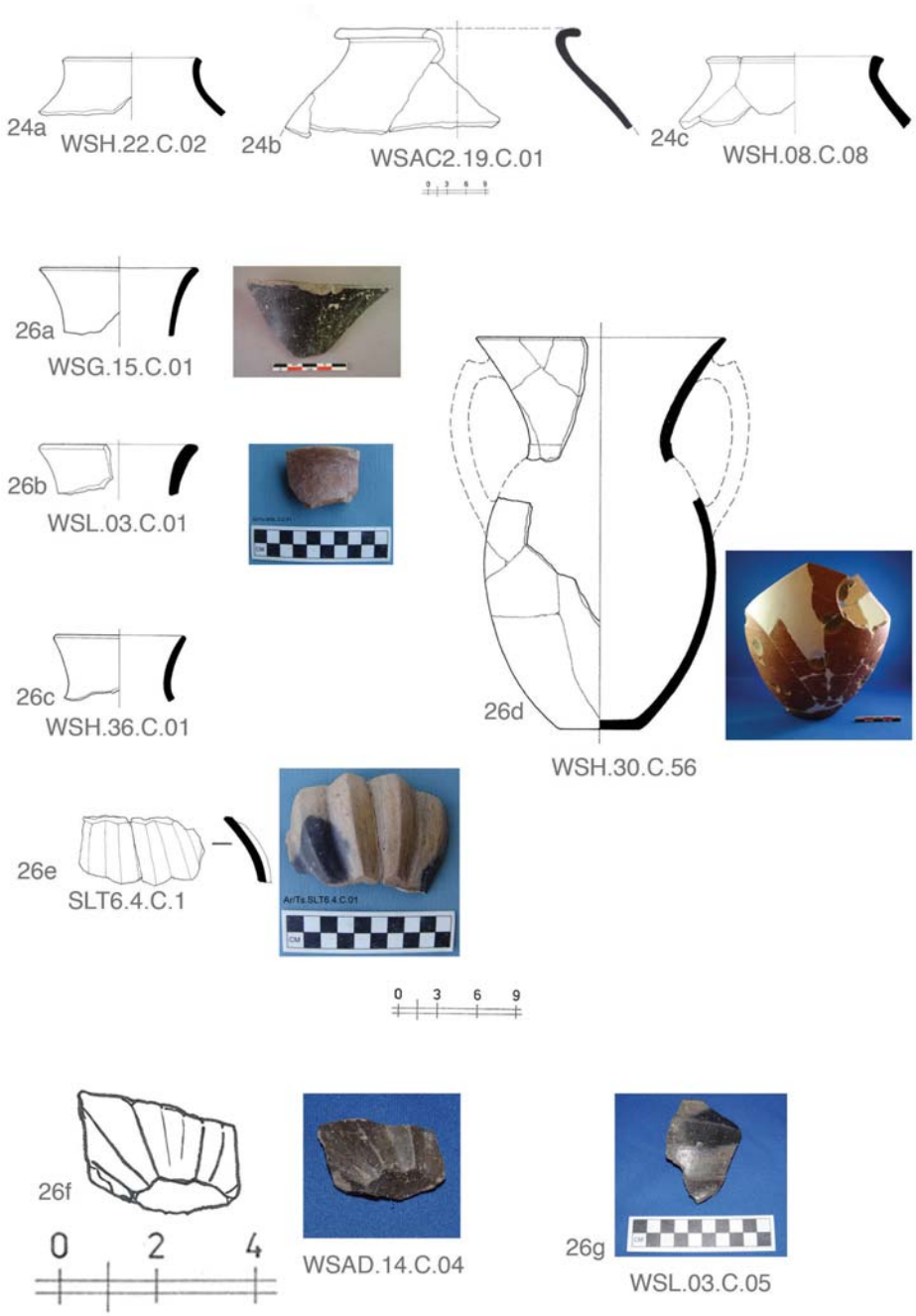
19b
WSH.22.C.01
19c
WSN.25.C.02
19d
WSH.15.C.02
20a
WSJ.b2.C.02
20b
C7.1.C.1
20c
WSI.19.C.24
20d
WSG.09.C.19
21
WSG.12.C.01
22a
C5.14.C.2
22b
WSC.5.C.01
22c
WSC3.09.C.1
22d
WSH.09.C.02
22e
WSG.12.C.04
22f
WSH.22.C.06
0 3 6 9

Pl. 7.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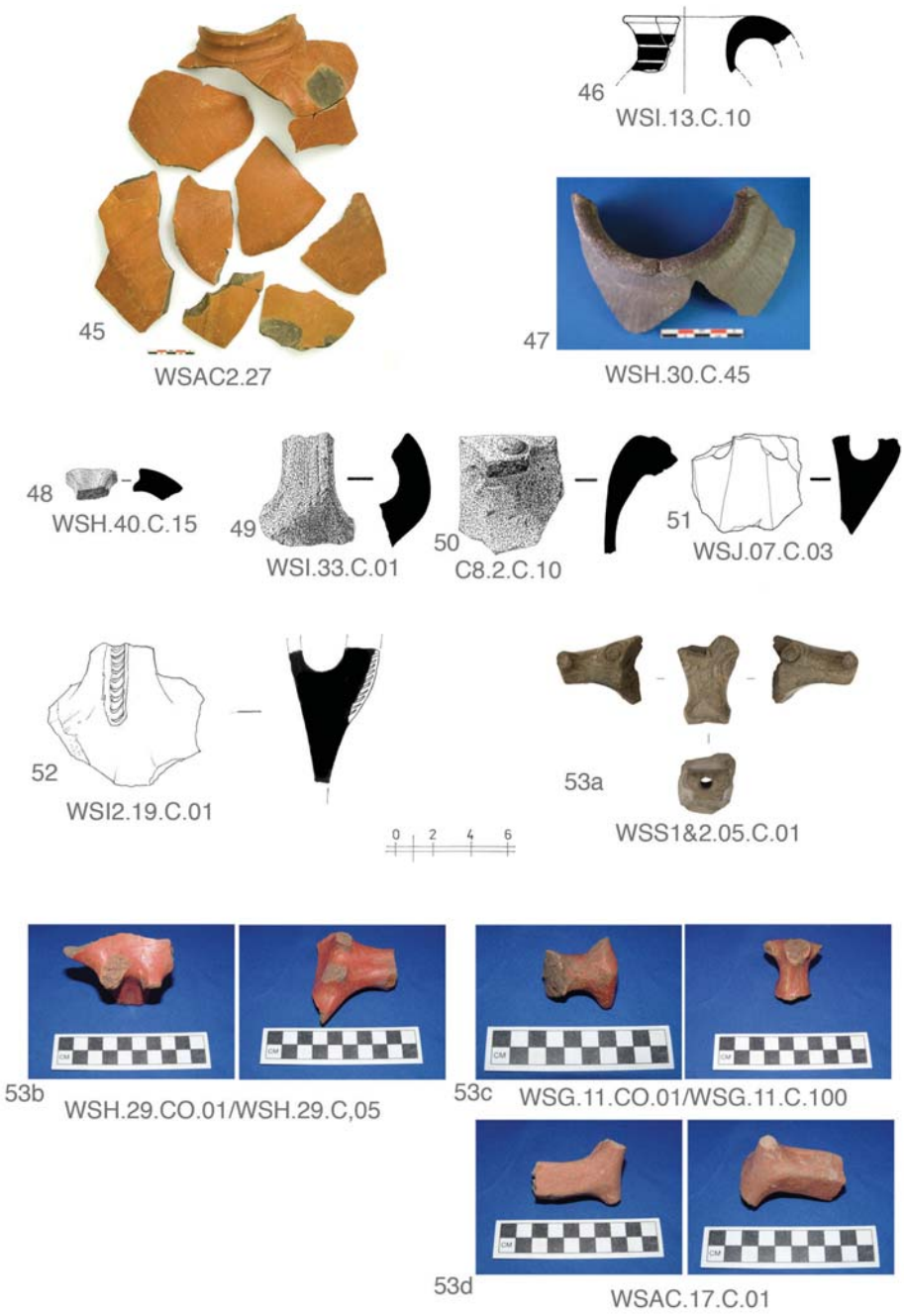
24b
WSAC2.19.C.01
24c
WSH.08.C.08
26a
WSG.15.C.01
26b
WSL.03.C.01
26c
WSH.36.C.01
26d
WSH.30.C.56
26e
SLT6.4.C.1
0 3 6 9
26f
0 2 4
WSAD.14.C.04
26g
WSL.03.C.05

Pl. 8.


26h
WSI2.07.C.02
26i
WSI2.07.C.03
26j
WSE.02.C.02
26k
WSI.16.C.01
26l
WSAD.20.C.01
26m
WSG.09.C.04
0 2 4 6
26n
WSN.40.C.01
26o
WSH.30.C.35
26p
WSAC3.30

Pl. 9.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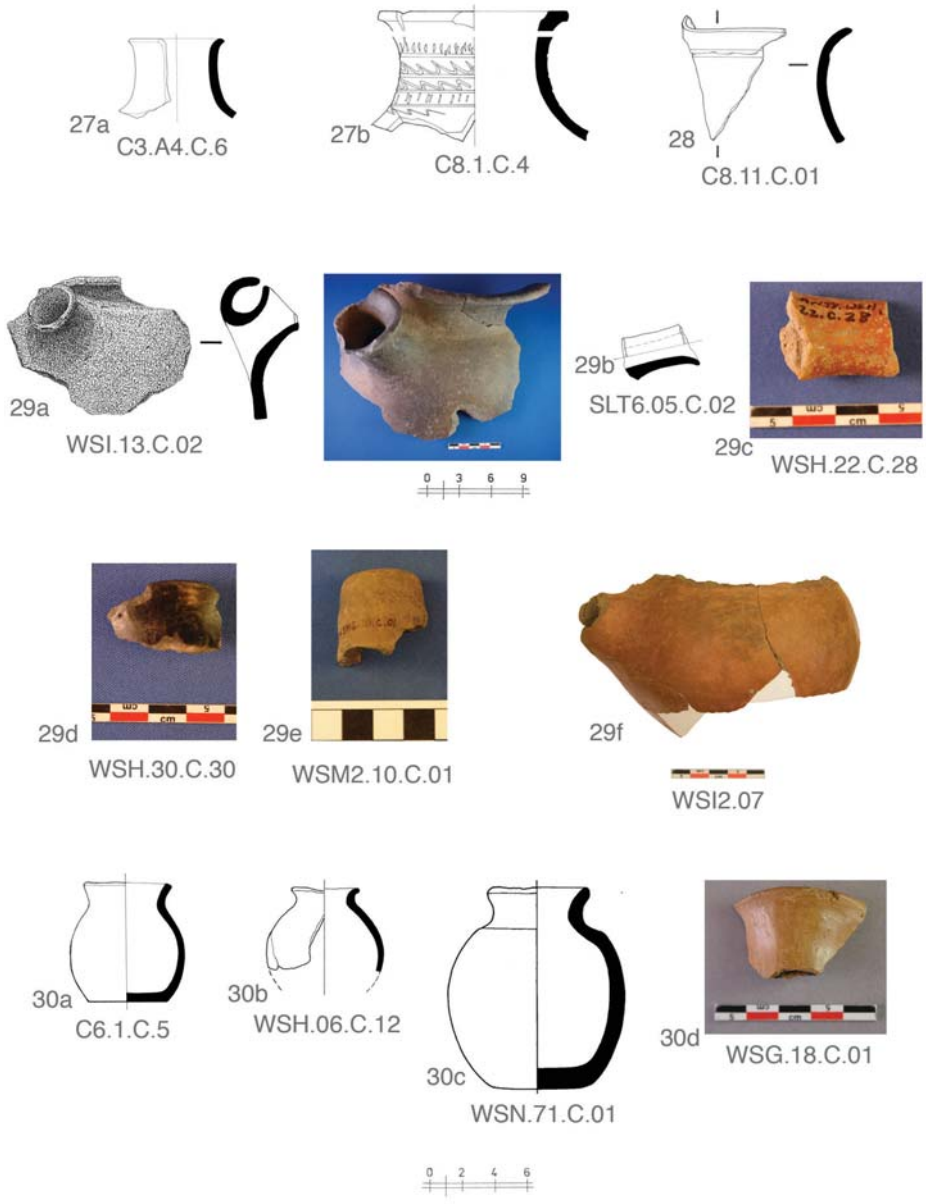
46
WSI.13.C.10
47
WSH.30.C.45
48
WSH.40.C.15
49
WSI.33.C.01
50
C8.2.C.10
51
WSJ.07.C.03
52
WSI2.19.C.01
0 2 4 6
53a
WSS1&2.05.C.01
53b
WSH.29.CO.01/WSH.29.C,05
53c
WSG.11.CO.01/WSG.11.C.100
53d
WSAC.17.C.01

Pl. 10.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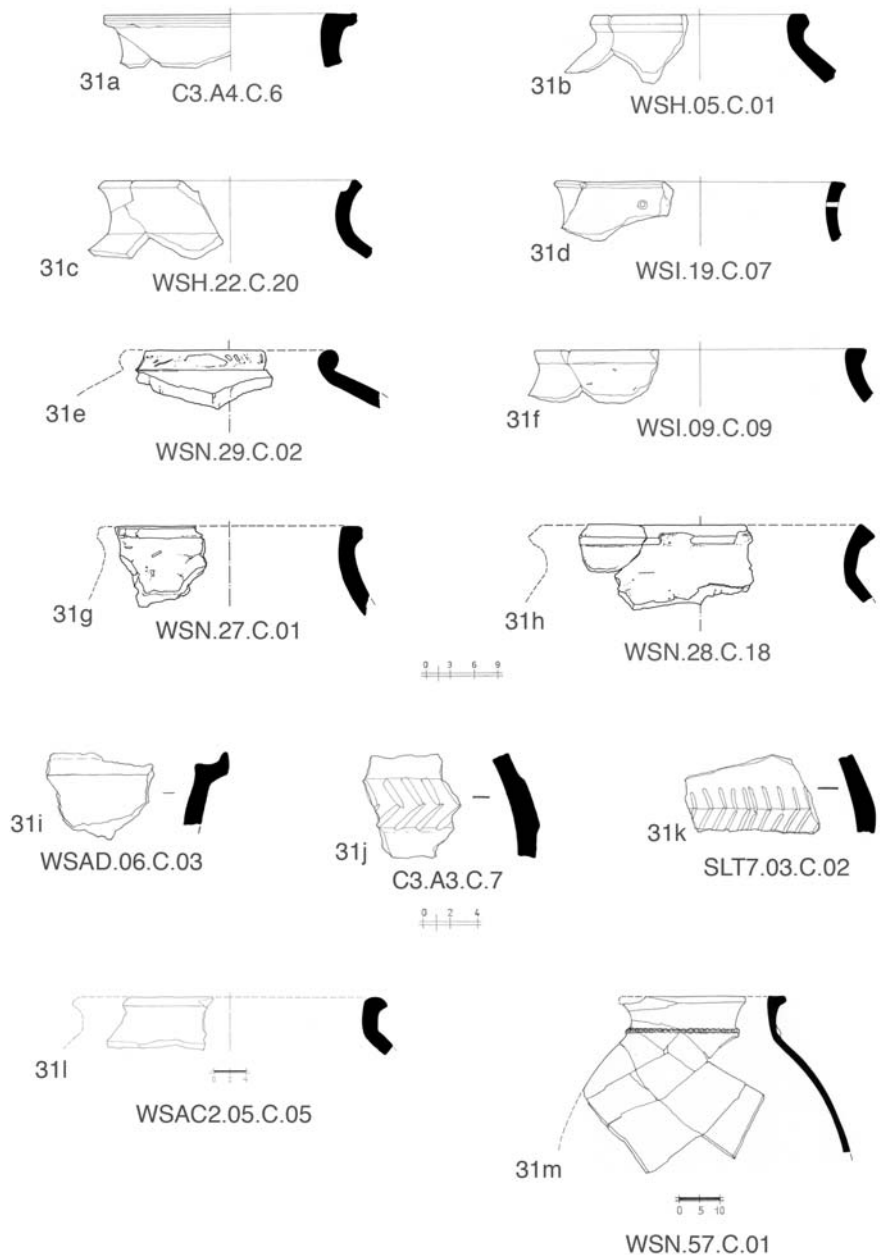
27b
C8.1.C.4
28
C8.11.C.01
29a
WSI.13.C.02
0 3 6 9
29b
SLT6.05.C.02
29c
WSH.22.C.28
29d
WSH.30.C.30
29e
WSM2.10.C.01
29f
WSI2.07
30a
C6.1.C.5
30b
WSH.06.C.12
30c
WSN.71.C.01
30d
WSG.18.C.01
0 2 4 6

Pl. 11.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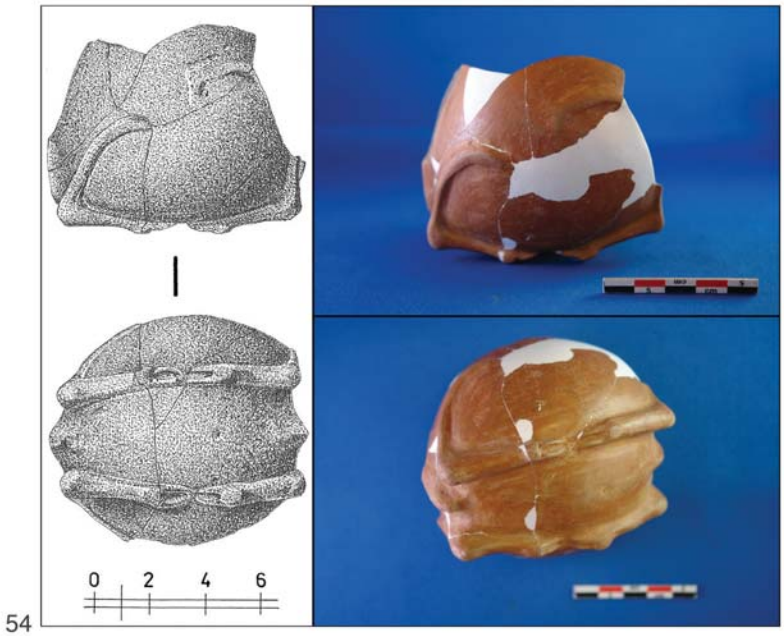
C3.A4.C.6
31b
WSH.05.C.01
31c
WSH.22.C.20
31d
WSI.19.C.07
31e
WSN.29.C.02
31f
WSI.09.C.09
31g
WSN.27.C.01
31h
WSN.28.C.18
0 3 6 9
31i
WSAD.06.C.03
31j
C3.A3.C.7
31k
SLT7.03.C.02
0 2 4
31l
WSAC2.05.C.05
31m
0 5 10
WSN.57.C.01

Pl. 12.



54 WSH.30.C.55

55a WSAC.11.C.12

55b WSI.20.C.02

55c WSH.08.C.17

55d C5.7.C.1

Pl. 13.

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THE FUNCTIONS OF GYPSUM BASES IN SASANID FIRE TEMPLES: A DIFFERENT PROPOSAL

BY

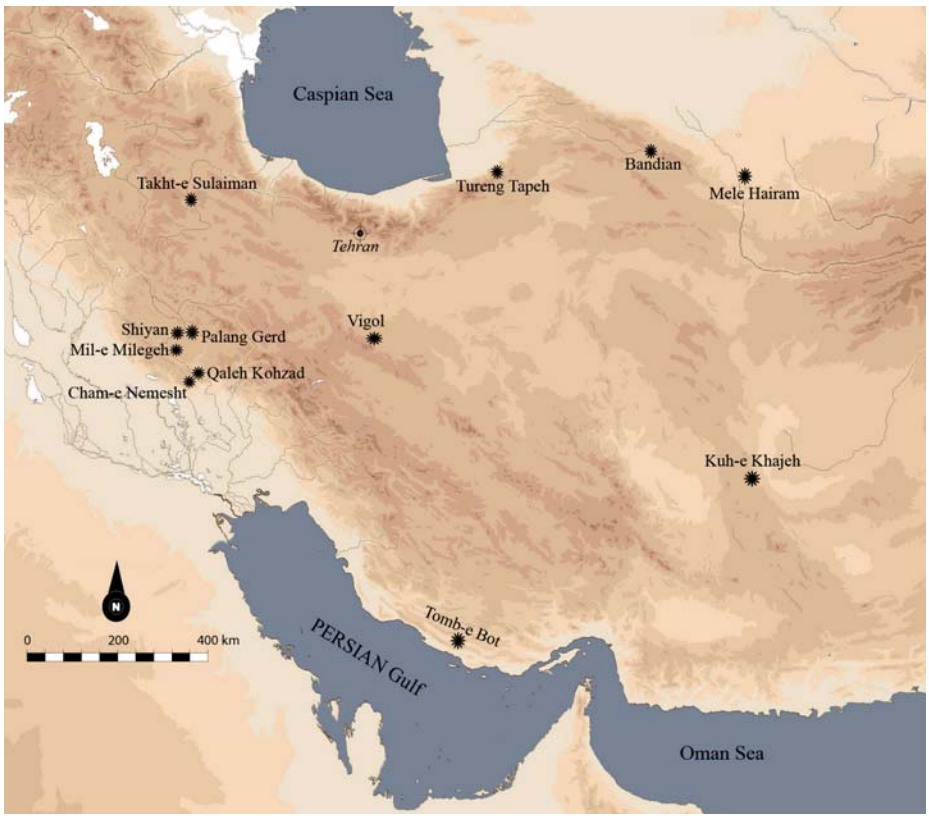
Shokouh KHOSRAVI[1], Sajjad ALIBAIGI[1] and Mehdi RAHBAR[2]
([1] Department of Archaeology, Razi University, Kermanshah, Iran;
[2] ICHHTO, Tehran, Iran)

Abstract: The valuable information obtained during the last decades and through excavations in three fire temples and Čāhār Taq in Shiyan, Mil-e Milegeh and Palang Gerd (Islam Abad region, W-Iran) can clarify several points regarding the ritual architecture of the Sasanid period in western Iran. A number of decorated plaster bases have been found during the excavations in the above-mentioned fire temples, as well as in other cases such as Cham-e Nemesht in Dareh Shahr (Ilam), which were situated on a T-shape platform and between two of the four piers of fire temples. Despite a few proposed interpretations regarding the possible function of these piers, a new prospect can be considered by means of historical texts and archeological evidence. *Abu Reyhan Al-Birouni*, in his book "*Atār Al-baqiyah an Al-qurun Al-Xāliyah*", referred to an anecdote about Peroz I and mentioned an element known as "Donbeka" in the shape of a seat (throne) outside the Gonbad Khaneh (the space under the dome). The remains of this element are still recognizable in some Sasanid fire temples such as Palang Gerd, Shiyan and Mil-e Milegeh Čāhār Taq in Western Iran as multiple gypsum bases, as brick platforms in Mele Hairam (Turkmenistan) and Bandiyan (Khorassan) fire temples and as plaster platforms overlooking the central hearth fire of the monument in Tureng Tapeh (Gurgan) and Vigol (Isphahan) fire temples. Moreover, the motifs on silver plates from the Sasanid era depict a king sitting on a throne with bases similar to the discovered gypsum bases. Therefore, it is possible that a throne or a seat had been put on the T-shape platform and that the discovered bases are its remains; furthermore, the stone bases and the slab on top of the T-shape platform in Tomb-e Bot (Fars) strengthen these evidences and foster this proposition.

Keywords: Fire Temple, Sasanid Period, Gypsum Bases, Throne, Sasanid metal vessels, *Donbeka (Donbekahw)*.

Introduction

The results of the excavations in Shiyan, Mil-e Milegeh and Palang Gerd, three Sasanid fire temples and Čāhār Taqs, in western Iran (Map 1)



Map 1. The Location of the Fire Temples Pointed in the text (Courtesy of Francois Desset).

have provided us with new insights and considerable evidence regarding Sasanid ritual architecture. The excavations in the mentioned sites located in Islam Abad County in Kermanshah province, led to the discovery of remains such as the base of a plaster hearth and *Yazišen-gāh* which confirm the function of the structures as fire temples.

All these three fire temples have a rectangular-shaped depression or a raised space in the central part, precisely under the dome, that is attached to a T-shaped plaster platform on one side.

The remnants of these plaster bases are more visible in the Shiyan fire temple. There are three or four rows of plaster bases with leaf shaped decorations and a square cavity at the center, right at the top of the T-shape platform and perpendicular to the central square (based on the discoveries

in Bandiyan, Mele Hairam, Vigol, Takht-e Sulaiman and Kuh-e Khajeh). The small square deepening at the center might have been the place to fix the main hearth of the fire temple.

The function of these bases is not clear and has not yet been the subject of any precise interpretation but a few ideas were proposed; therefore, more studies and investigations in this regard are necessary in order to come up with a definite interpretation to recognize the functions of the unknown components of the fire temples and gradually move toward the analysis of the ritual ceremonies. The purpose of the present study is to suggest possible functions of these bases according to their location, the motifs on a number of silver plates dating to the late Sasanid period and a few historical texts. Our main focus will be on the plaster bases in Shiyan and Palang Gerd fire temples and Mil-e Milegeh Čāhār Taq, while some evidence from other sites such as Bandiyan in Darreh Gaz, Meleh Hairam, Turang Tepe,Vigol and Takht-e Sulaimān will be also considered.

Shiyan fire temple

During the rescue excavations in the Shiyan dam basin (Islam Abad-e Gharb County) in 2005 an important fire temple was discovered (Rezvani 2005; 2006; Moradi 2009). This fire temple consists of a Čāhār Taq and a corridor on one side, a square, plaster deepening at the center and attached to a T-shape plaster platform in its northern side (Pl. 1). The remains of three gypsum bases, attached to each other, were discovered on top of this T-shaped platform as well as outside the Čāhār Taq, between the two northern piers and corridor; their surfaces are covered by simple carved leaf shaped decorations (Pl. 2 & 3). The bases are 60 cm wide and 180 cm long. Rezvani (2005: 29- 46) believes that they are fire holder bases.

Palang Gerd fire temple

The fire temple is located 30 km to the East of Islam Abad and was excavated by Shokouh Khosravi and Asghar Rashno in 2012 (Khosravi & Rashno 2012; 2014, Khosravi 2016). The building is relatively large, constructed from irregular various-sized stones and gypsum mortar and plastered by the latter as well. It has a square plan, 17×17 m in size (Pl. 4 a & b) and consisted of four large piers holding the Čāhār Taq and encompassed by a corridor and two doorways in southern and eastern areas (Khosravi &

Rashno 2014). Two fire holder bases were discovered in the central part of the eastern portico, right in front of the eastern doorway, in the other in the southern part in the middle of the south portico. A sunken rectangular-shaped structure was also recovered in the center which is attached to a T-shaped platform with three bases on its northern side (Khosravi & Rashno 2014). The three bases are aligned with the exterior side of the Čāhār Taq under the dome, all three measuring 186×60 cm (Pl. 5 & 6) (Khosravi and Rashno 2012).

Further excavations in the southern corridor of Palang Gerd fire temple led to the discovery of a single gypsum base which seems to have been relocated from its primary context as well as pieces of plaster plate which were probably the upper parts of the bases (Pl. 7). The authors suggest that the material, color, dimensions, decorations and a cavity at the center of this separated upper part are all indicating that this isolated piece must have been fixed on top of the base (Pl. 8). Although this piece is the only discovered sample of its kind, there must have been three hourglass shaped bases inside the building, if we consider this hypothesis.

Mil-e Milegeh Čāhār Taq

This monument is located in the southern highlands of western Islam Abad and was surveyed by Yousef Moradi in 2006 and excavated in 2010 (for more information see: Moradi 2009; personal correspondence with Yousef Moradi 2012). The structure seems like an isolated Čāhār Taq, constructed with material common for building a Sasanid fire temple in western Iran. According to Moradi, Mil-e Milegeh had a central deepening in between the four piers with a T-shape platform alongside it (see Pl. 9). The remains of a gypsum base were found on top of the T-shaped platform with some broken fragments scattered all over the interior space (Moradi 2009). The bases, with a central cavity, are decorated with simple, leaf shaped decorations and similar to the Shiyan fire temple (Pl. 10). In fact, the row of plaster bases is both inside and outside the Čāhār Taq in all of the three cases.

Proposed interpretations about the discovered plaster bases in fire temples

As we have never discovered a complete piece on its original place so no one can offer a clear interpretation about their function. Rudolf Naumann has not discussed the function of the gypsum bases at Takht-e Sulaimān

(Pl. 11 & 12) and only named them the "small plaster cones" with unknown functions (Naumann 1977: 66); but according to Huff, these cones, fixed on a plaster platform, "because of their similarity with the representations on the reverse of Sassanian coins, may be interpreted as fire altars" (Huff 2008: 4, fig. 5). Nosratollah Mo'tamedi believes that the plaster bases in the fire temple known as Qaleh Kohzād Vezenhānr[1] (Seymareh Valley, Kouhdasht County- Luristan) are the pedestals which were constructed on the corners of the building (Mo'tamedi 1992: 11-13), while according to Rezvani, these plaster bases in the Shiyan fire temple are hearth's bases (Rezvani 2005: 29, 49). However, Yousef Moradi has cautiously proposed three functions for these bases in the Shiyan fire temple and the Mil-e Milegeh Čāhār Taq and states that "despite the unclear shape of these bases, we can propose three different functions for them. First, another base was directly placed upside down on the underneath base and probably a metal vessel was fixed on top of them as a place for preserving the sacred fire. If this hypothesis holds true, similar to the discovered gypsum fire holder in Bandiyan fire temple and the plaster base found in Tapeh-B in the eastern cemetery of Kaka village in Gonbad-e Kawoos, these bases were functioning as fire holder's base (*Adusht*). However, we still face the question about the structure of the bases in Mil-e Milegeh which are not integrated like the usual stone and gypsum fire holders[2]. Secondly, probably a vertical bar was installed inside the central cavity of the base and a vessel or a plate was fixed on top of it; the third function could be fixing a flag or a similar object inside the bases' central hole…" (Moradi 2009: 160).

In the following, the authors are proposing an alternative interpretation as to the function of the mentioned bases, according to the motifs used of some Sasanid silver plates as well as authentic historical narrations.

Silver Plate from Hermitage Museum (*Klimova Plate)*

A magnificent gilded silver plate dating back to the late Sasanid period is kept in the storage rooms of the Hermitage Museum (Pl. 13). The depicted motif inside the plate shows a person in full frontal face (the king)

[1] The monument known as the Qaleh Ko'hzad is clearly a Sasanid fire temple, however its excavator has not thoroughly studied its architectural components and presented it as a Mithra Temple.

[2] Fire holder's bases in Palang Gerd, Vigol and other numerous samples discovered in Fars and Bushehr reveal that the bases of the gypsum fire holder were all built in two separate parts.

sitting on a throne and holding both hands a long sword. The throne is simple, without any complicated decoration, and two of its bases are frontally depicted (Harper & Meyers 1981: 236, Pl. 35), therefore, we cannot be sure if the throne had only two bases. The bases look like hourglasses and apparently each of them consisted of two parts attached to each other from a square pyramid part i.e. one is placed upside down the other one (Pl. 14).

On three other plates, the motifs show ceremonial scenes such as coronations, with kings sitting on thrones displaying relatively the same bases as the one on the Klimova Plate:

– the silver plate (Pl. 15) being currently preserved in Walters Art Gallery in Baltimore (Grabar 1967: 100-101, fig. 13),
– the gilded silver plate (Pl. 16) being preserved in the Arthur M. Sackler Gallery (Gunter 1988: 43, fig 26)
– and another gilded silver plate (Pl. 17) in the Hermitage Museum (Orbeli & Trever 1935, Pl. 16).

Although the three mentioned plates are all stylistically different, their depicted throne are all similar to the ones on the Klimova Plate. Hence it seems possible to make a comparison based on the similar shape and decorations on the bases discovered in fire temples and the bases depicted on the Klimova Plate's throne, before reaching the conclusion that these gypsum bases were probably the bases of a throne or a seat which was also depicted in three other silver plates belonging to the Sasanid and early Islamic era.

Assuming that the plaster bases in the Sasanid fire temples were the bases of a throne or a seat, now another important question should be raised about the function and position of this throne or seat in the fire temples. Clarifying and elaborating this point requires referring to some historical and geographical texts.

Mohammed bin Mahmoud Ibin Ahmad al-Tousi in his book, *"Ajā'ib al-makhlūqāt wa gharā'ib al-mawjoūdāt"* , states that:

> "سور وی گرد درآمده بر دریای کوچک (دریاچه) و آتش خانهٔ بزرگ (آتشکده) و تخت کیخسرو آنجا بُوَد. تختی برنجین به دو گردون کشیدندی، در آنجا نهاده بود و جام گیتی نما، تا روزگار گبران به سر آمد و اسلام ظاهر شد"

> "He held a banquet on the small sea (lake) and great fire house (fire temple) with the throne of *Kay Khosrow*. A throne made of brass,

positioned on two spheres. It was placed there with the Cup of Jamshid until the day of *Gabrs* (Zoroastrians) came to an end and Islam emerged" (Tousi 2003: 241).

According to some researchers, the theme and topic of the depictions on the *Klimova Plate is a reflection of a historical narrative mentioned in "Ajā'ib al-makhlūqāt wa gharā'ib al-mawjoūdāt"* (Razmjou 1999: 16). In this case, given the explicit reference in the book, the depicted motif on the plate shows a fire temple and the referred lake and its nearby fire temple should be the Āz̲ar Gushnasp fire temple (Takht-e Sulaimān) midway between Urmia and Hamadan, very near to the present-day town of Takab and which housed one of the three "Great Fires" or "Royal Fires" in which the Sasanid rulers were supposed to go in order to ascend the throne.

Moreover, Abu Reyhan Al-Birouni, in his book "*Atār Al-baqiyahan Al-qurun Al-Xāliyah*" has mentioned another important point:

".. سپس فیروز از کانون [آتشکده] بیرون آمد و از قبه آتشکده بیرون شد و بر دُنبکا نشست و دُنبکا چیزی است از زر آنرا مانند تخت میسازند ولی کوچکتر از آن است و رسم این است که باید در مدخل آتشکده باشد که تا چون پادشاه وارد شود بر روی آن بنشیند و هرابده و نگهبانان آتشکده بر گرد او جمع آیند و بر او چنانکه رسم ملوک است سلام کنند" ...

... "and then Peroz came out of the center (fire temple) and left the dome of the fire temple and sat on Donbeka (Donbekahw)[3]; Donbeka is a seat made of gold which looks like a throne but smaller, the traditions says it must be installed at the entrance of fire temple so the king would sit on it the moment he arrives and Hērbads and guardians of the fire temple gather around him and make courtesy and bow before the king ..." (Abu Reyhan Al-Birouni 2007: 354).

According to this text, there should have been a seat outside the Čāhār Taq and outside the space beneath the dome which was the seat of the king or another dignified person. Therefore, if we assume this element as a constant architectural element of the fire temples, then one should expect its traces in the excavated Sasanid fire temples. Given the close similarity between the motifs of the Klimova Plate's throne with the discovered

[3] See Tafazzoli 1988: 101-106.

gypsum bases in Sasanid fire temples in western Iran, they probably are the remaining bases of a seat or a throne. However, it seems that this architectural element is different in Bandiyan and Meleh Hairam fire temples or more recent fire temples such as Vigol or Tureng Tapeh where no corridor around the buildings was found.

In the following, we will have a look on these fire temples where such plaster bases were lacking; later we will discuss elements in these fire temples which might have served the same purpose as the previously mentioned bases in fire temples from western Iran.

Bandiyan fire temple

The significant complex of Bandiyan, located near the town of Dargaz in northern Khorasan province is one of the most magnificent discoveries from the Sasanid era. Throughout six seasons of excavations, the building's central part was found with corridors, a fire temple, ossuaries and a tower of silence (Rahbar 1998; 1999 a & b; 2004; 2008). A relatively low and small brick platform, measuring 1.5 × 1.5 m, was discovered at the center of the fire temple's hall (Pl. 18). Although the position and possible function of this platform is not certain it can be the "*Donbeka*" which, according to *Abu Reyhan*, was the seat of the king or the local administrative ruler[4].

Mele Hairam fire temple

The Mele Hairam Sasanid fire temple, located in southern Turkmenistan, nearby the Iranian border, was excavated in the 1990s by Barbara Kaim from the University of Warsaw (Kaim 2002, 2004, 2006).

In contrast to many other monuments of the Sasanid period, this fire temple was not surrounded by any corridor and, similarly to the Bandiyan fire temple, it had a small hall with an iwan encompassed by other rooms and constructions. Behind the fire temple, the remains of a brick platform were found at the center of room I, which, according to Kaim,"was probably used for placing vessels or circular stands"(Kaim 2001: 14; 2004:

[4] A structure was discovered during the excavation in the southern part of the fire temple. This structure is not complete but the authors believe this gypsum structure is probably similar to other structures in Sasanid fire temples of Western Iran.

333; 2006: 67). But it seems that this space had a more important purpose and specific function rather than a storage place (Pl. 19). This platform and its surrounding space might have been used as a seating place right in front of the hearth or as *Abu Reyhan* stated, as a "*Donbeka"* .

Vigol fire temple

A series of excavations in 2010, conducted by Mohsen Javeri in Vigol site, 10 km southeast of Arān and Bidgol towns, in the north of Isphahān province, revealed the remains of a fire temple, measuring 10 × 11 m, with porticos on both sides. The remains of a plaster hearth were found at the center of the fire temple, positioned on a three-stepped plaster platform (Pl. 20 & 21).

According to Javeri, in northern part of the fire temple, right in front of the fire holder base, a plaster platform with three steps leading up to the fire holder's base is located (Javeri 2012: 47). However, it is likely that the hourglass-shaped bases that are seen in the fire-temples of western Iran such as Shiyan, Mil-e Milegeh and Palang Gerd are manifested in Vigol fire temple as a three-stepped platform in front of the fire holder's base.

Takht-e Sulaimān fire temple

A brick wall or a plaster platform was built between two of the circular columns of Takht-e Sulaimān's columned hall, while the remains of a platform with a cone-shaped gypsum stool can be seen in front of them (Pl. 11 & 12) (Naumann & Huff 1972: Abb. 11; Huff 2008: 4 and fig. 5). Naumann suggests that three altars (Mihrab) in the west of this hall, and water channel sand basins on its eastern side probably had ritual purposes (Naumann 1977: 66).

The similar shape of these cone shape bases and specially their location of discovery propose the same functional hypothesis, as a seat, as other similar discoveries in Sasanid fire temples.

Tureng Tapeh fire temple

In 1967 and 1969, the remains of an important fire temple on top of Tureng Tapeh was excavated by French archeologists (Boucharlat 1985; 1999; Boucharlat & Lecomte 1987). It was a Čāhār Taq, measuring 10 × 9.35 m,

without any corridor (Pl. 22). The fire temple was blocked on three sides (Deshayes 1973). Although it was difficult to detect every part of the fire temple due to the extensive erosion, Jean Deshayes mentioned a brick platform, measuring 2 × 2 m and 11 cm height, in the center of the building. He also referred to the circular motifs on the plaster coated surface of the platform and to fragments of a broken gypsum base on top of it (Deshayes 1973). It seems that the mentioned brick platform was originally a platform rather similar to the Vigol fire temple (Pl. 20 & 21). The platform in Tureng Tapeh is also located in front of the hearth's base and had probably a function similar to its other occurrences.

Tomb-e Bot fire temple

Tomb-e Bot is a one-hectare area at the center of a 5 to 7 hectares site, 40 km north of Siraf, on the northwest of Lamerd plain in southern Fars province (Asgari Chavardi 2012: 160). The site has been surveyed and excavated by Alireza Asgari Chavardi during several seasons; a stone carved fire holder's base was revealed at the center of the fire temple, beside a T-shaped plaster platform (Pl. 23). Several half-meter cylindrical stone bases were fixed on the surface of the platform. A flat stone plate was fixed on the platform and the stone bases, turning the platform into a bench (throne). This is a strong evidence to illustrate the function the gypsum or stone bases and the T-shaped platform.

Discussion and conclusion

According to Naumann (1977: 66), the discovered bases in the PD fire temple of Takht-e Sulaimān have probably been used to raise a flag during ritual ceremonies. He also suggested that the cone-shaped bases in the fire temple hall were plaster bases with unknown function. Huff (2008: 4) believes that these cone-shaped bases are similar to the representations of the fire altars on Sasanid coins, yet he did not propose any specific function for them. Moradi (2009) also avoided to propose a definite opinion about the function of the gypsum bases discovered in Mil-e Milegeh Čāhār Taq, but he suggested three hypotheses for their function: fire holder's bases, bases for putting vessels or bases for flapping a flag.

In fact, it is not easy to discuss the functions of these plaster bases, but given the depicted motifs on a silver plate in the Walters Art Gallery in

Baltimore and the gilded silver plate (the Klimova plate, in the Hermitage Museum) as well as considering the narrations in "*Ajā'ib al-makhlūqāt wa gharā'ib al-mawjoūdāt*" and another book by Abu Reyhan Al-Birouni "*Atār Al-baqiyah an Al-qurun Al-Xāliyah*", a different function can be proposed for these little-known architectural elements. Regarding the importance of the historical texts and the depicted motifs on the mentioned artifacts from the Sasanid era, we can see the close similarity of the depicted bases on the plate and the discovered bases in the fire temples in western Iran; if this assumption holds true, it is possible to propose a new interpretation for the function of the gypsum bases previously interpreted as fire holder's base or places for putting flags in ritual ceremonies. With a glance on the depicted motifs on the Klimova plate, it is not unlikely to assume that these bases were the lower part of a seat, positioned on the T-shape platform in fire temples. It is worth mentioning that the isolated gypsum base in the Palang Gerd fire temple and the plaster fragments scattered around it might had been the upper part of this seat or bench; in this case, the mentioned discovery is another evidence similar to the seat depicted on the Klimova plate.

Relying on the descriptions in *Abu Reyhan Birouni*'s book about the kings seat known as "*Donbeka*" (see Tafazzoli 1988), considering these gypsum bases as seats bases is not improbable; as he stated, this seat was located outside the *Gonbad Khaneh* (the space under the dome) of the fire temple and in case of the discussed fire temples in this paper, they were horizontally overlooking the central part (the rectangular pool-like depression) which was the location of the main hearth and the place of the prayers (Kaim 2004). Therefore, as the plan in the Bandiyan-e Daregaz and the Mele Hairam fire temples is different and as they lack the corridor around the main hall, the mentioned seat could be located in the adjacent room or the hall in front of the fire temple. With the exception that the seat in these two fire temples was made of bricks while it was made of plaster in Tureng Tapeh and Vigol temples.

Another important point is the well preserved seat discovered in Tomb-e Bot. The seat has stone bases with a flat stone plate on top of them and shows that it is clearly meant to be a seat and makes our interpretation more acceptable[5]. All in all, it seems that all T-shaped platforms made of

[5] It is worth mentioning that during the excavations in Haji Abad fire temple in Darab by the late Dr. Masoud Azarnoush, some bases were found in the shape of animal paws.

plaster, stone or bricks, regardless of their apparent differences, had a similar function.

As it was discussed, *Abu Reyhan Al-Birouni* mentioned an architectural element as *"Donbeka"* (throne) in Fars fire temples; a similar reference is also mentioned in the book entitled *"Ajā'ib al-makhlūqāt wa gharā'ib al-mawjoūdāt"* about a throne used as seat for the king in another fire temple, probably in Takht-e Sulaimān. Therefore, it seems that considering these seats as common in fire temples is supported by archeological evidence and historical references. Thus, if our arguments, based on historical texts and archaeological evidence, are not challenged by future discoveries, we can suggest that a slight part of the ceremonies held in fire temples is revealed and that the function of one of the common but little-known elements of the Sasanid fire temples has been finally recognized.

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The importance of this finding is in its relationship with the motifs on Sasanid plates, depicting the king sitting on a throne (Pl. 24 & 25) with legs in the shape of an animal leg with paws (see Harper & Meyers 1987: 109; 220; 234; 237).

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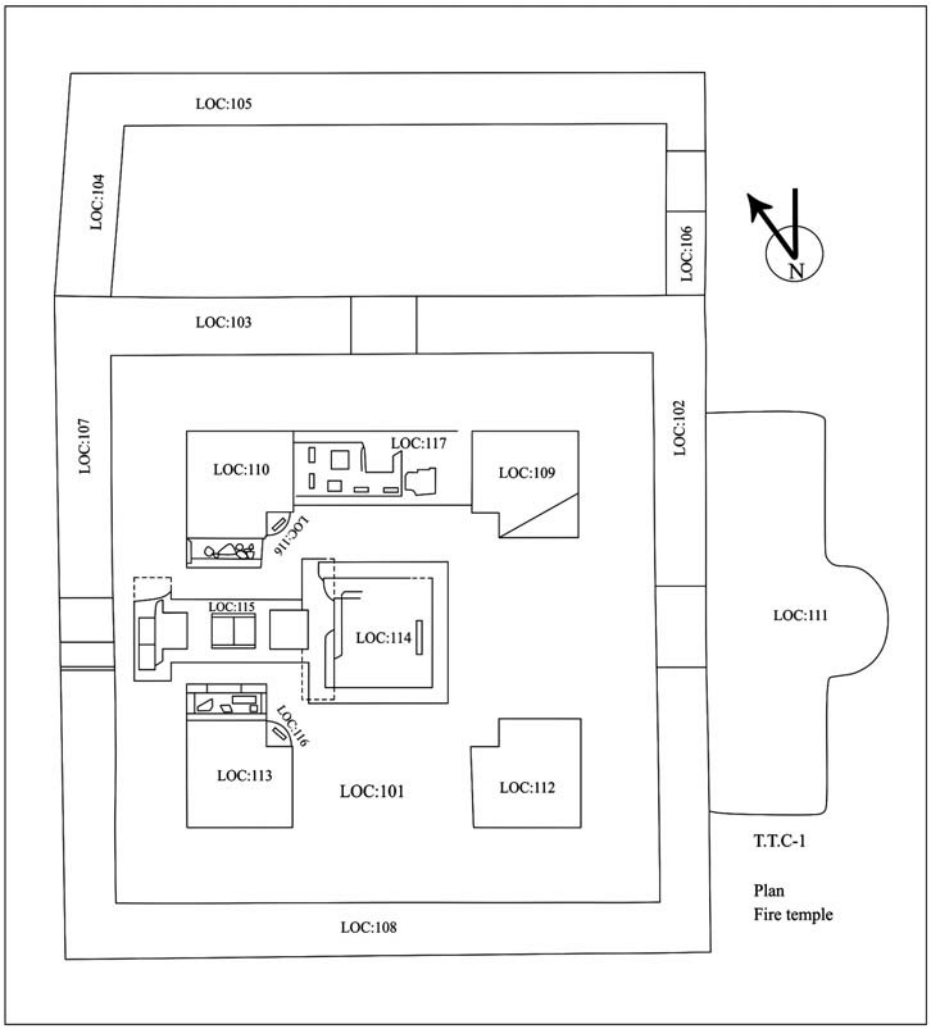
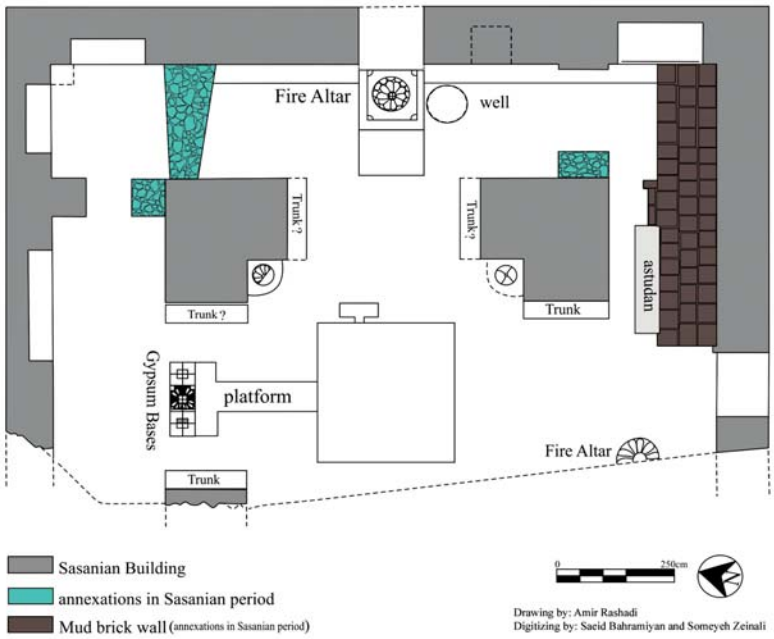


Pl. 1. Shiyan fire temple. The position of gypsum bases on top of the T-shape platform on the western side of the building (After Moradi 2009: plan 7).

Pl. 2. Central pool, T-shape platform and the gypsum bases on top of it. Shiyan fire temple viewed from the East (after Moradi 2009: fig. 10).

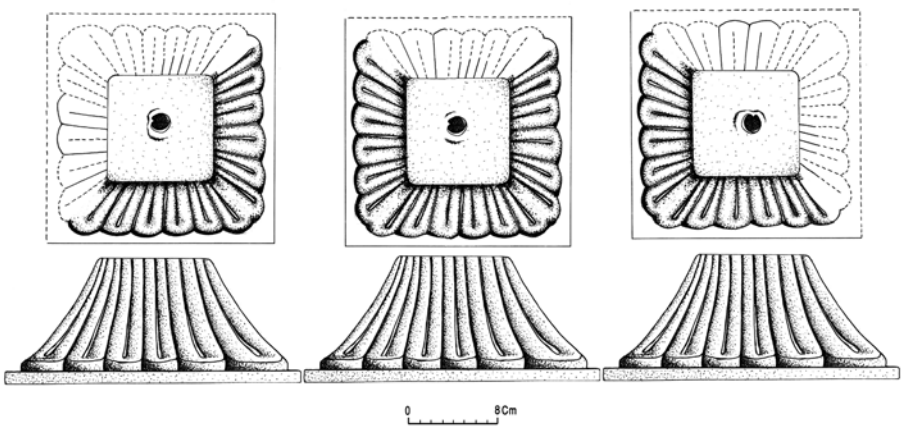
Pl. 3. Shiyan fire temple. gypsum bases on top of the T-shape platform (after Moradi 2009: fig. 13).



Pl. 4a. The plan of Palang Gerd fire temple.
The triple gypsum bases on top of the T-shape platform.

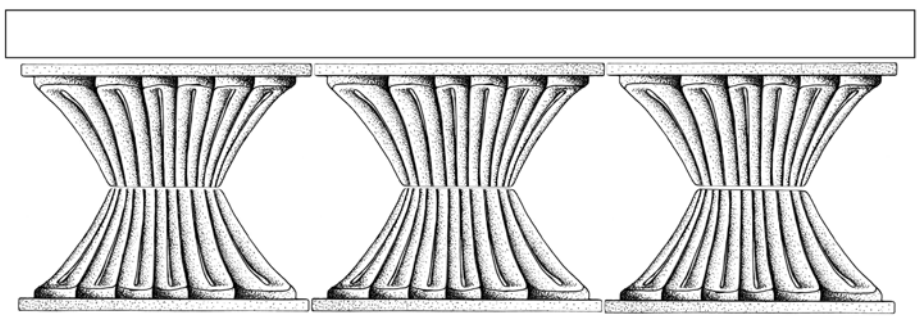
Pl. 4b. Palang Gerd fire temple. The triple gypsum bases on top of the T-shape platform.

Pl. 5. The triple plaster bases on top of the T-shape platform,
Palang Gerd fire temple.

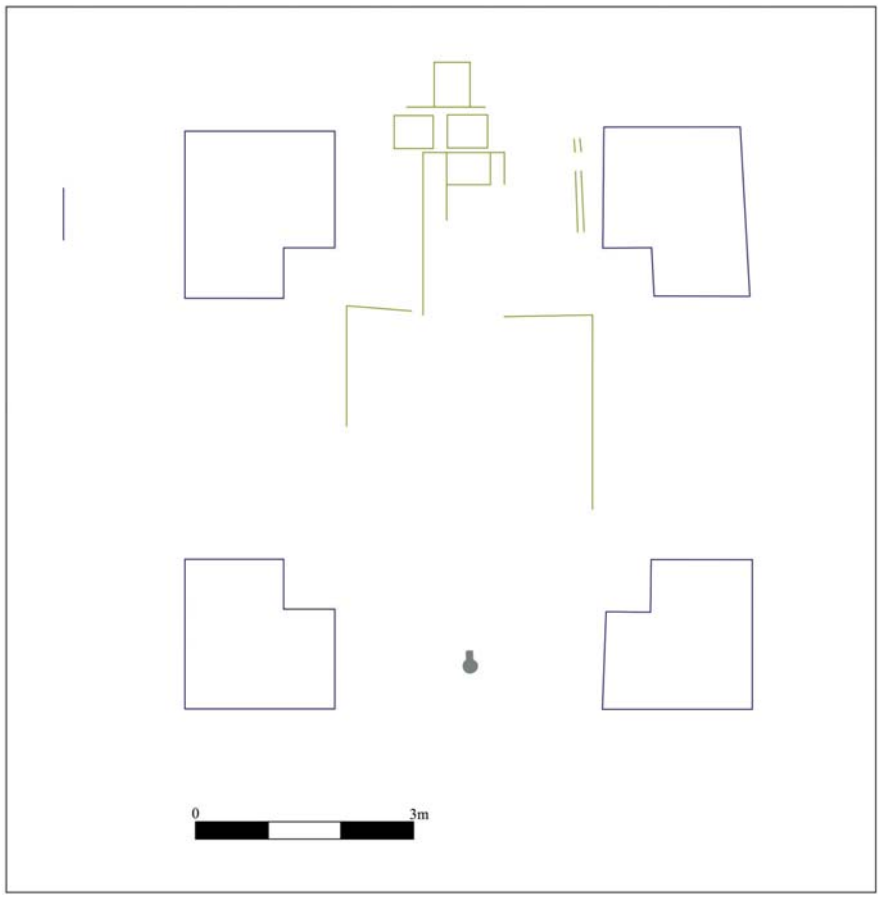


Pl. 6. The triple plaster bases on top of the T-shape platform,
Palang Gerd fire temple (after Khosravi & Rashno, 2012: 835, fig. 106).

Pl. 7. The isolated gypsum base discovered in the southern corridor in Palang Gerd fire temple (after Khosravi & Rashno 2012: 859, fig. 510).

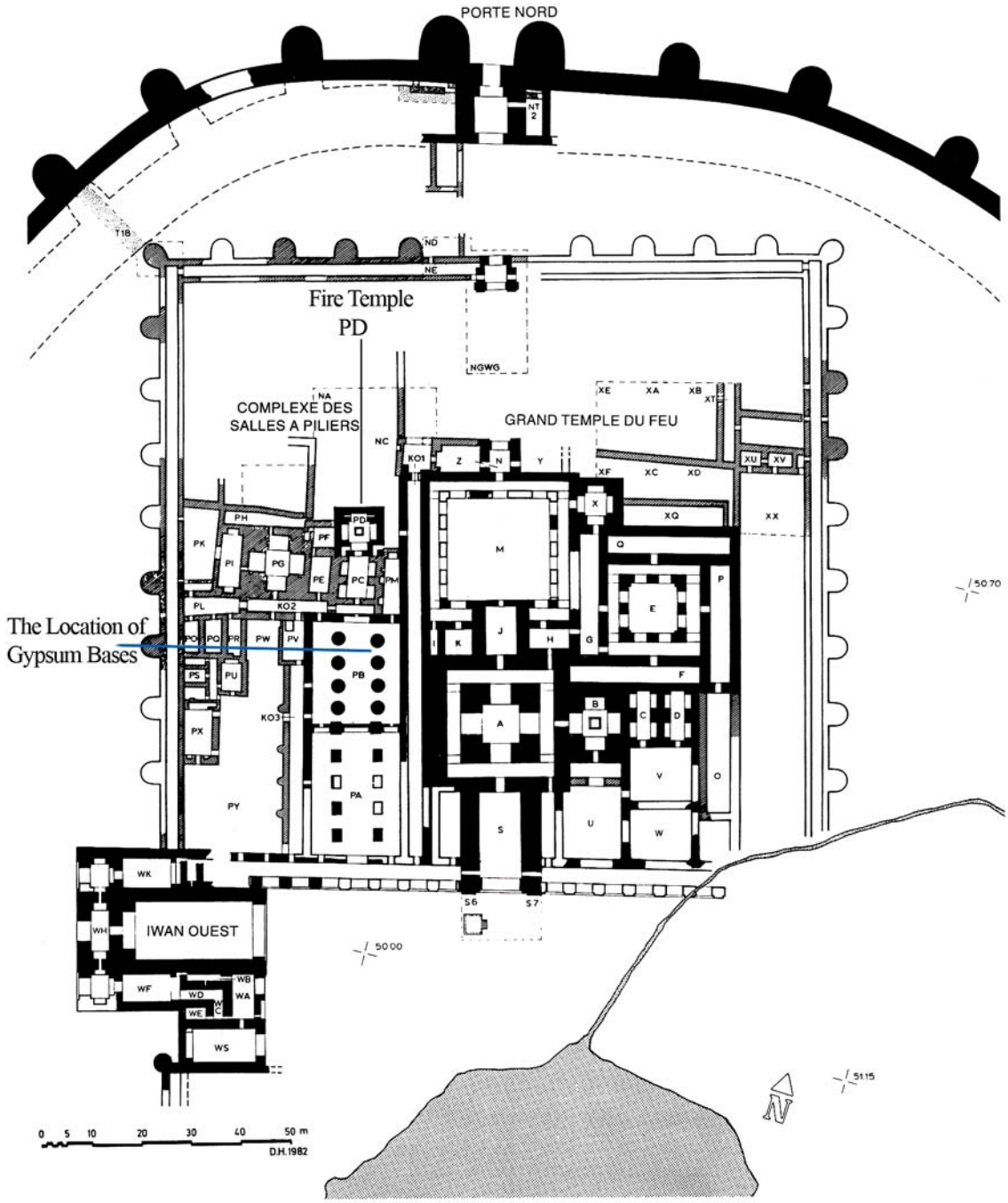


Pl. 8. A reconstruction of the gypsum bases from Palang Gerd fire temple (Khosravi & Rashno, 2012: 835, fig. 106).



Pl. 9. Mil-e Milegeh Čāhār Taq and the gypsum bases on top of the T-shape platform (after Moradi 2009: plan 6).

Pl. 10. Broken gypsum bases in Mil-e Milegeh Čāhār Taq (after Moradi 2009: fig. 14).



Pl. 11. Part of Takht-e Sulaimān religious complex (Naumann & Huff 1972: Abb. 8).

Pl. 12. Gypsum cones in Takht-e Sulaimān (Naumann & Huff 1972: Abb. 11).

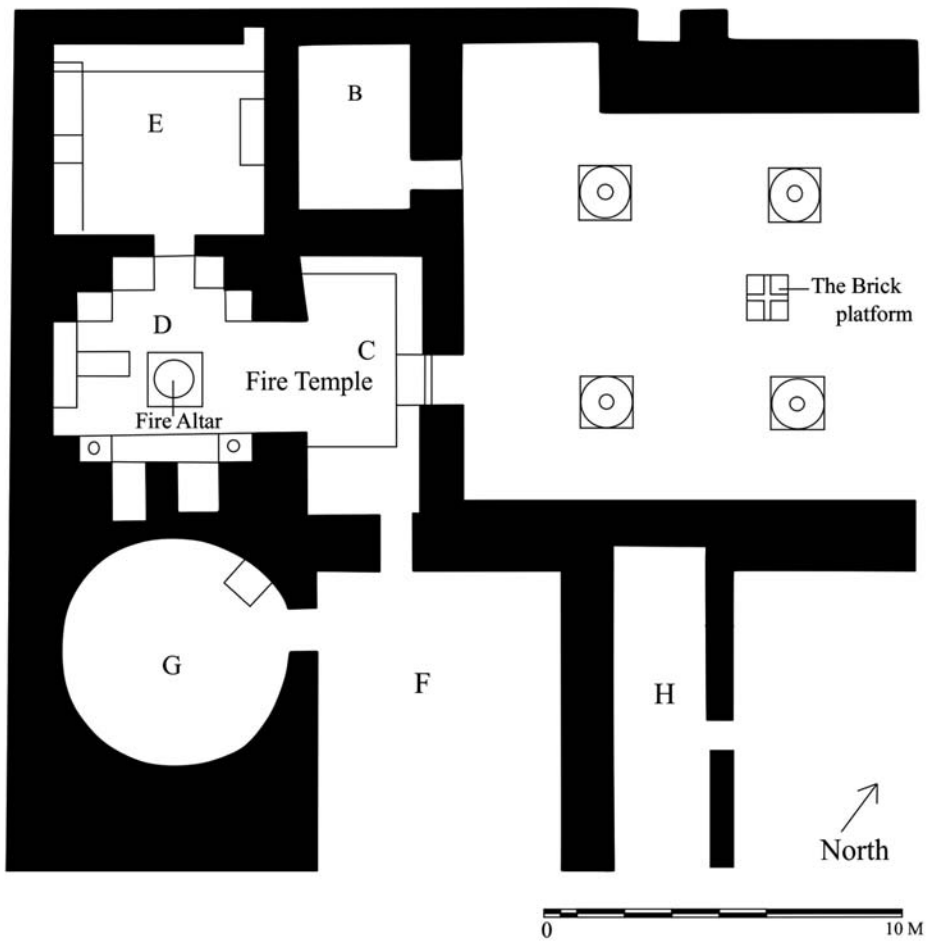
Pl. 13. Klimova silver plate's depiction of royal throne (Harper & Meyers 1981: 236, Pl. 35).

Pl. 14. Part of the Klimova silver plate's motifs showing the royal throne (adapted from Harper & Meyers 1981: 236, Pl. 35).

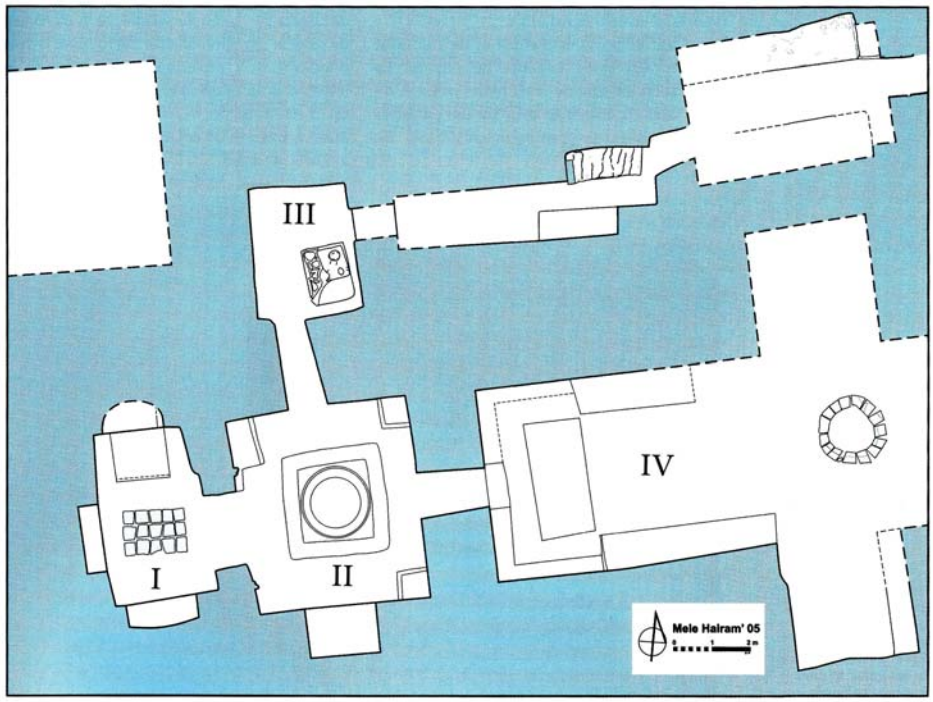
Pl. 15. The gilded silver plate from Walters Gallery in Baltimore (6th-7th century A.D). Depiction of a throne with bases similar to the gypsum bases in Sasanid fire temples (Grabar 1967: 100-101, fig. 13).

Pl. 16. The gilded silver plate from *Arthur* M. Sackler *Gallery* (7th century A.D). Depiction of a throne with bases similar to the gypsum bases in Sasanid fire temples (Gunter 1988: 43, fig. 26).

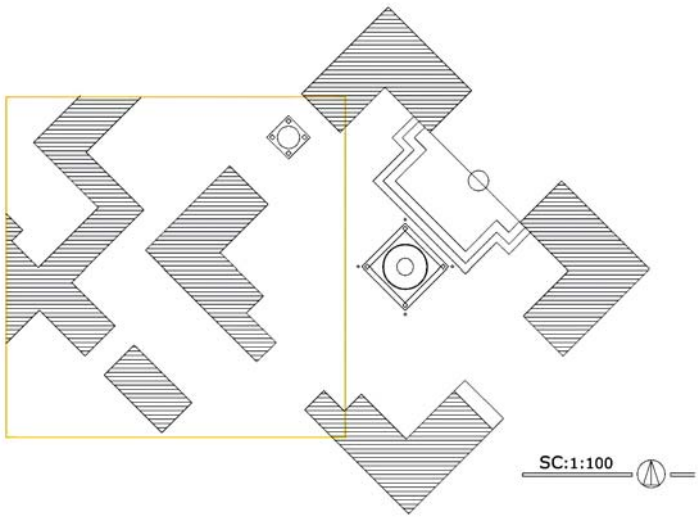
Pl. 17. The gilded silver plate from the *Hermitage Museum* (7th – 8th century A.D). Depiction of a throne with bases similar to the gypsum bases in Sasanid fire temples (Orbeli & Trever 1935: Pl. 16).



Pl. 18. Bandiyan Sasanid complex, Dargaz. The brick platform in the hall, in front of the fire temple (Rahbar 2008: Fig. 2).

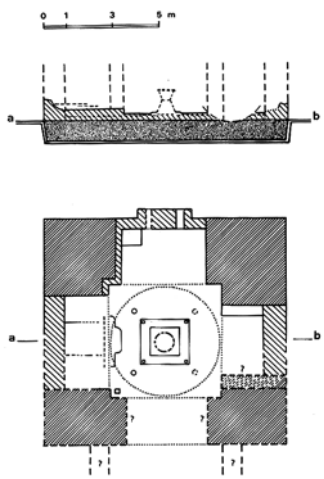


Pl. 19. Mele Hairam fire temple in Turkmenistan. Brick throne in the western room of the fire temple (Kaim 2006: 67).



Pl. 20. Vigol fire temple (Javeri 2012: plan 1) (Courtesy of Saeid Bahramiyan).

Pl. 21. The gypsum base in front of the fire holder base, Vigol fire temple (Javeri 2012: 51) (Courtesy of Saeid Bahramiyan).



Pl. 22. Tureng Tapeh fire temple (Boucharlat 1999: 67).

Pl. 23. The bench in Tomb-e Bot fire temple with stone bases and plate on top of it (Asgari Chavardi, 2012: 407, fig. 23).

Pl. 24. Silver vessel showing the king on a seat (Harper & Meyers 1981: 220, Pl. 19).

Pl. 25. Silver vessel showing the king on a seat with bird feet
(Harper & Meyers 1981: 237, Pl. 36).